

CFTRI-MYSORE



2252  
Fruit growing co.



- 2252 ① fruits  
② fruit growing ⑪ crystallised  
③ " cooking fruits  
④ " preservation  
⑤ " hygiene  
⑥ fruit bottling //  
⑦ " drying //  
⑧ " products //  
⑨ Jams ⑩ Jellies

Tues

L



FRUIT GROWING  
COOKING & PRESERVING

*By the same author*

- THE COMPLETE GARDENER
- MODERN MARKET GARDENING FOR PROFIT
- MODERN FLOWER GROWING FOR PROFIT
- MODERN GLASSHOUSE FLOWERS FOR PROFIT
- A B C OF GARDENING
- A B C OF VEGETABLES
- A B C OF FLOWER GROWING
- A B C OF THE GREENHOUSE
- A B C OF BULBS AND CORMS
- A B C OF ROCK GARDEN AND POOLS
- A B C OF GARDEN PESTS AND DISEASES
- A B C OF FRUIT GROWING
- A B C OF CONTINUOUS CLOCHE
- THE REASON WHY OF GARDENING
- THE HORTICULTURAL NOTEBOOK
- HOME WINDOW AND ROOF GARDENING
- THE GARDENER'S STANDBY
- VEGETABLE GROWING AND COOKING

# FRUIT GROWING COOKING & PRESERVING

BY

W. E. SHEWELL-COOPER

M.B.E., N.D.H., F.R.S.A.

DIRECTOR, THE HORTICULTURAL EDUCATIONAL AND ADVISORY  
BUREAU AND PRINCIPAL, THE HORTICULTURAL TRAINING  
CENTRE. PREVIOUSLY COMMAND HORTICULTURAL  
OFFICER, SOUTH EASTERN AND EASTERN COMMANDS.  
SOMETIME HORTICULTURAL SUPERINTENDENT  
OF THE SWANLEY HORTICULTURAL COLLEGE



LONDON  
ALLAN WINGATE  
12 Beauchamp Place, S.W.3

*First published in 1951  
by Allan Wingate (Publishers) Limited  
12 Beauchamp Place London S W 3*

*Made and printed in Great Britain by  
Billing and Sons Ltd  
Guildford and Esher*

*All rights reserved*

2252 ✓

F8, 39N : 6

N 51

CFTRI-MYSORE



2252

Fruit growing co.

DEDICATED TO  
THE REV. T. L. LIVERMORE, M.A.(CANTAB.),  
PRESIDENT,  
BRITISH YOUTH FOR CHRIST

ERRATUM

The initials after the author's name on the front  
of the jacket wrapper should read as follows:

M.B.E., N.D.H., F.R.S.A.



## CONTENTS

CHAPTER	PAGE
PREFACE	ix
I. REVIEWING THE POSITION	ii
II. PRUNING, RINGING AND THINNING	16
III. ROOT STOCKS, PLANTING, POLLINATION, TYPES OF TREES AND BUSHES	23
IV. GENERAL FRUIT HYGIENE	36
V. APPLES	43
VI. PEARS	54
VII. PLUMS AND DAMSONS	59
VIII. CHERRIES	66
IX. THE CANE FRUITS	72
X. RED AND BLACK Currants	83
XI. GOOSEBERRIES	93
XII. STRAWBERRIES	102
XIII. FIGS, GRAPES, NECTARINES, PEACHES AND QUINCES	108
XIV. FRUIT BOTTLING	120
XV. FRUIT DRYING	133
XVI. FRUIT CHUTNEYS, FRUIT PICKLES AND FRUIT SAUCES	138
XVII. JAM AND JELLY MAKING	144
XVIII. CRYSTALLISING FRUITS	168
XIX. COOKING AND SERVING FRUIT	172
APPENDIX	181
INDEX	185

## LIST OF ILLUSTRATIONS

	PAGE
Ringing a fruit tree	18
Scion planting above ground. Union of stock and scion is well above soil level (union is overemphasised)	27
Cordon spacing and lowering. Cordon planted upright, six months later trained at 45°, two years later at 30°	30
Staking with Rainbow Tie	33
Showing how a fruit tree should be tied to a stake—note the sacking	34
A group of pests: (i) Gooseberry caterpillar, (ii) Woolly aphis on youngish wood, (iii) Sawfly maggot in apple	37
Spraying cordon apples with a Solo sprayer in order to control scab	39
Showing the disease known as canker. This can be controlled by painting with Medo	41
Applying fish manure, containing a high potash content, along row of cordons	46
rotary fan dust gun used on cordons	47
Typical scab disease on apple	49
Netting plums in order to give frost protection at blossoming time	60
<b>A plum tree trained fan shape</b>	61
Plum thinning on a fan-trained tree. Note the plums that have been thinned out in the author's hand	63
Big Bud on black currant. Note how late the affected buds are in moving, as compared with the others	84
Planting a black currant. Note the way the roots are being spread out on a little mound in the bottom of the hole	86
Red currant brutting (breaking) to prevent the shoot growing again	89
Mulching the trees with grass—an excellent method of supplying humus to the ground	90
Thinning out Careless gooseberry bushes—this ensures that the berries which remain grow larger	94
Pruning a young gooseberry with the idea of producing good branches for the future	95
Pruning gooseberries—before and after	97
Strawberry planting with a trowel	104
Some examples of the author's bottling which have been preserved over 26 years and which are still in perfect condition	121
Peeling pears in brine water	160

## PREFACE

IT has taken an international war to make the men and women of this country fruit minded. Prior to 1939 we were, all of us, so used to buying oranges whenever we felt inclined and to having bananas day by day that many of us gave up the idea of growing our own fruit. Now men and women are saying, 'Let's grow all we can—it's cheaper—it's fresher—it's better.'

We are learning, in fact, or have learned, how necessary fruit is as a protective food, especially if it is fresh as it is when grown by ourselves. Black currants rank high in the protective scale, mainly owing to their vitamin C content, followed by strawberries and gooseberries. Black currants are, in fact, nearly four times as valuable as gooseberries, and the vitamin C content of raspberries isn't lost even when the fruits are made into jam! Few people know that!

Let us therefore grow more fruit in this country, and let us learn to preserve it properly.

This book aims to help men and women to become efficient fruit growers and fruit preservers. It is the companion volume to *Growing and Cooking Vegetables*, which is much in demand.

I must thank my lady wife for all her help and Miss Margaret Watson, who was the Chief Instructress when I took a course in Fruit and Vegetable Preservation at Campden (Bristol University) twenty years ago.

Those who want fuller information about the growing of fruit alone will do well to consult *The A.B.C. of Fruit Growing*, published by the English Universities Press.

May I also thank my personal secretary, Miss Margaret Foley, for her careful typing of the script.

W. E. SHEWELL-COOPER,  
*Principal,*

THE HORTICULTURAL TRAINING CENTRE,  
THAXTED, ESSEX.

## Chapter I

### REVIEWING THE POSITION

#### *Soil and Situation*

IT is indeed fortunate that fruit can be grown in almost all parts of Great Britain. It used to be thought that it was only certain counties which were suited to fruit culture, but this fallacy has been exploded for many years now. I have grown, for instance, just as good Coxes in Cheshire as in Kent—though Cheshire was always thought to be a dairying county only! To be successful, however, it is necessary to choose the right varieties and root stocks, to know about planting and pruning, and to realise the importance of correct manuring and pest and disease control.

Suggestions with regard to suitable soils are made when dealing with the individual fruits chapter by chapter. It is sufficient to say here that a much deeper examination of soil is necessary than one usually expects—for even the most dwarfing trees may send down roots to 10 ft. or more, and gooseberry roots may go down at least 8 ft. It is therefore advisable to dig down at least 3 or 4 ft. so as to see whether the ‘subsoil’ consists of, say, hard iron sandstone or rock and so is impenetrable, or consists of, say, solid sodden clay. Under such conditions the deep-seeking roots of trees and bushes would perish.

## FRUIT GROWING AND PRESERVING

Shelter is important, not only to protect the blossom from biting cold winds in April and May, but also to prevent fruits from being blown from the trees in the late summer and autumn. Cold easterly winds may not only ruin blossoms, but may check the young fruit that has developed and cause it to shrivel. Most gardens, however, will have the necessary protection, but care should be taken not to plant the trees or bushes in draughts caused by paths leading from the front garden, back gates and the like.

On the other hand, low-lying spots are never as successful as those at a higher altitude. The cold frosty air is apt to collect in such situations, and the blossom will thus be ruined each season. It is just as important to have free air drainage as it is to have good soil drainage. See, therefore, that the frozen air may flow away to some area lower down, at blossoming time especially.

### PURCHASING TREES AND BUSHES

Whenever possible the intending planter should visit a recognised fruit nursery and make a personal selection of the trees and bushes he wishes to plant. Even if he doesn't know much about the job, it is always worth while consulting the firm concerned personally. Those who are unable to make their own choice by visit should write to one or two nurseries that specialise in raising fruit trees, getting them to submit quotations and guarantee delivery on or about a certain date.

It is most important to get the planting done at the right time, and this in most cases means the late autumn. To delay planting until the spring, as so many people do, generally leads to disappointment. The trees do not get a

## REVIEWING THE POSITION

chance of getting established before a dry spring may set in.

There is a great temptation for the beginner to buy cheap lots. He should resist the temptation and be prepared to pay a reasonable price for trees, bushes and canes of known varieties, of known stocks and of good strains. He should send his order in early so that he may have the pick of the material available. (Definite instructions are given in the chapters dealing with the individual fruits as to the best root stocks and varieties.) The beginner must realise the importance of the root and that apples, pears and most plums are not grown on their own roots, but on the root of some special 'wilding.'

When varieties are ordered without mentioning the stock on which they are required, disappointment may result, for the tree may take years before it comes into cropping and may grow to a very large size. People with small gardens and allotments naturally want trees that crop almost immediately and that take up very little room.

Another temptation to be resisted concerns the age of the trees and bushes. It is always better to plant young trees, for they get established to their new position more quickly. Bush apples and pears, for instance, that are four and five years of age are usually stunted specimens from the nursery, and as a result they never do much good. Plant bush apples, pears and plums as two-year-olds, half-standard trees as two- or three-year-old, and standards at three or four years of age. Trained trees for walls can be older, say four years, though cordons are best at two or three years of age. Currants and gooseberries should be two years old and blackberries and loganberries one year old. Maidens, or one-year-old plants, are essential in the case of strawberries, and young one-year-old canes of

## FRUIT GROWING AND PRESERVING

raspberries, blackberries and loganberries should always be planted.

### SOIL PREPARATION AND INITIAL MANURING

When preparing the soil for fruit trees, bastard trenching, or double digging as it is sometimes called, should be carried out. All perennial weeds should be removed, but no farmyard manure or compost need be added; if it is felt that some organic manure of this kind is necessary it should be applied as a top dressing on the surface of the ground all round the fruit trees and bushes after they have been planted. There it will act as a mulch and so ensure that the moisture is retained in the soil, and further it will provide the necessary organic matter, for bit by bit the worms will come up and pull the compost or manure into the ground.

Actually there isn't any need to dig the whole ground over, especially if the trees or bushes are to be planted in grass. In this case the hole will be about 3 ft. square, and as the soil is being dug out to plant the trees or bushes, a fork may be used to break up the subsoil below without in any way bringing it to the surface.

When bastard trenching is carried out it is convenient to dig out a trench 2 ft. wide and a spade's depth at one end of the plot, taking the soil from this trench to the other end of the area to be dug. The would-be tree planter can then get down into the bottom of the trench in order to fork the soil over, leaving it where it is. He should then move a garden line back another 2 ft. and dig over the soil from this strip into the first trench, thus filling it to the brim and over. Trench No. 2 is thus formed, which in its turn should have the bottom forked over. Trench No. 3 should then be prepared, the soil going into trench

## REVIEWING THE POSITION

No. 2. This work thus continues from one end of the plot to the other, where the soil from No. 1 trench will be found to fill up the last trench prepared.

When trees are planted on land that has been well manured in the past for vegetable crops and the like, there should be no need to do more during the first two or three years than to apply the mulch of manure or compost already advised. Land known to be poor, however, should be fed right from the start—a good initial dressing consisting of a compound fish fertiliser, applied at 4-5 oz. to the square yard. The ‘analysis’ would be, say: 5 per cent. nitrogen, 9 per cent. phosphates, and 10 per cent. potash.

## LIMING

The heavier land may need lime and this will help to lighten it. A sandy soil may be acid, too, and lime will correct this. It is therefore advisable to take the precaution of applying hydrated lime on the surface of the ground after planting fruit trees, at 4-7 oz. to the square yard; a further dressing being given at a similar rate every three years. Lime helps to release potash, which apples and gooseberries in particular like so much.

Lime will not be necessary on the chalky or limestone soils, which are usually sufficiently calcareous already. It is a good plan to make a simple test with a B.D.H. soil indicator before applying the lime, so as to be certain as to the need and the quantities.

## Chapter II

### PRUNING, RINGING AND THINNING

How difficult it is to describe pruning in a book! In practice there are so many 'ifs' and 'buts' that the main rules seem hardly worth while.

Fortunately the pruning of the soft fruits and cane fruits is comparatively easy, and full instructions with regard to these appear in the chapters which apply to them. The pruning of plums and damsons and cherries seems fairly straightforward also, and most of the problems therefore occur in the case of apples and pears.

The beginner should grasp a number of main principles in the first place.

Principle No. 1. The harder a tree is pruned in the winter the stronger it grows.

Principle No. 2. Pruning has to differ according to the age of the tree. Young trees naturally grow strongly and need not therefore be pruned as hard as old trees. Young trees may have, on the other hand, to be pruned fairly hard in order to produce good, strong branches on which the fruit may be borne in future seasons. Trees of 'middle' age need only moderate pruning so as to help keep the trees in bearing and yet keep the balance of growth.

Principle No. 3. Varieties which have different habits of growth have to be treated in different ways. For instance, apple trees which bear their fruit on the tips of

## PRUNING, RINGING AND THINNING

young shoots should not have all their side growths cut back hard or else the fruiting portions are cut off.

Varieties which tend to droop and spread have to be pruned to an upward-pointing bud so that they are helped to grow upwards.

Principle No. 4. Old trees which are tall and straggly may be de-horned. This is the process of cutting back the main branches in winter to just above a smaller branch lower down, which itself terminates in a young one-year-old growth going in the right direction. In this way the size of the tree can be reduced without ruining its proper shape.

Principle No. 5. Summer pruning is quite a different system to winter pruning. It keeps the right balance between shoot and root growth, especially in the more restrained forms of trees grown in small gardens. Summer pruning, therefore, checks the growth of shoots and roots, while winter pruning promotes the growth of new shoots.

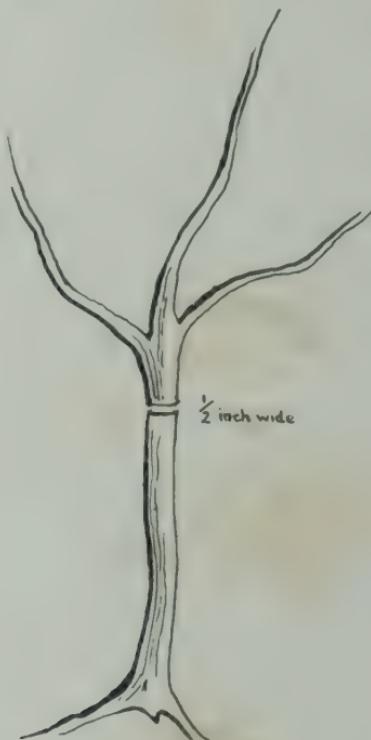
Principle No. 6. All cuts in winter pruning should be made to a bud. A sharp-bladed knife should be used and no stump or snag whatsoever should be left. In one-year-old growths the cut should be made just a little above a bud and slanting away from it. Cuts should be made square or in such a way that the surface slants down to the bud.

Principle No. 7. All large cuts made with a saw should be pared smooth with the sharp blade of a knife and painted over with a thick white lead paint afterwards.

Principle No. 8. Each tree must be treated as an individual. A tree, for instance, that has been well manured should not need pruning so hard as a tree that has been starved. Trees that are bearing heavy crops will need pruning harder than trees that are bearing little or nothing.

## FRUIT GROWING AND PRESERVING

Sufficient has been said to show that pruning is much better learnt by demonstration. The author, incidentally, is always glad to arrange for his assistants to give demonstrations in gardens, and special contracts may be made to this end with him.



*Ringing a fruit tree.*

More detailed instructions, of course, on pruning appear in the chapters that follow.

### RINGING

A complete ring of bark should be removed down to the wood from  $\frac{1}{4}$  to  $\frac{1}{2}$  in. wide, a few inches below the level of the lowest branch. This should be done round about

## PRUNING, RINGING AND THINNING

lossoming time, using a sharp knife. The wound thus made should be covered over with adhesive tape or thick white lead paint.

Ringing is done in the case of trees over eight or nine years of age which are making nothing but growth and are not forming fruit buds or setting fruit. It is more successful in the case of apples and pears than it is with stone fruits.

It should *never* be carried out in the case of trees which are making little growth or are starved and stunted.

## KIFE-EDGE RINGING

In order to encourage any particular one-year-old bud to break out it is possible to make a cut just over the bud, making another just above the first one  $\frac{1}{8}$  in. or less above. If the blade of the knife is turned downwards a small wedge-shaped piece of bark can be removed.

On the other hand, if it is desired to cause any particular bud to plump up into a fruit bud, a similar wedge-shaped piece of bark and wood should be made just *below* the bud.

This is sometimes called 'nicking' by gardeners.

## OOT PRUNING

Young trees that are growing too strongly may be dug up in their entirety, the strongest roots then being cut back by 2 ft. or so, and replanted. With trees over ten years of age it is necessary to dig a deep trench half-way round one side of the tree in winter-time, and in doing so to cut off the large roots 4 ft. or so from the stem. The following winter a similar trench is dug out on the other side of the tree the same distance away.

### SPUR THINNING

Very old trees that have produced numbers of spurs (those are the side-growths on which the fruit buds are produced) may need to have these spurs thinned out. It may be necessary to cut out every other spur the first year, and the following year to cut the multiple fruit spurs back to obvious-looking fruit buds lower down. If spur thinning is done in the winter preceding what is likely to be an 'off year' for fruit production there is every likelihood that the tree may be brought into annual bearing—if in the past it has been a biennial cropper. This biennial cropping of apple and pear trees is as common in some gardens as it is a nuisance. Who wants a knock-down crop one year and nothing the next?

### SUMMER PRUNING

Probably the most successful method of summer pruning is to cut back all the lateral shoots of from 8-9 in. in length that are starting to go 'woody' at their base, and *directly* they get to this length. The cuts should be made to within  $\frac{1}{3}$  in. of their base. This pruning should continue right the way throughout the summer, beginning early in June and ending in September. Every time any shoot gets to the 8-9 in. length it should be cut back hard, as described.

The result is that there is no ordinary winter pruning to be done and the trees usually produce an abundance of fruit buds later and crop heavily.

The leaders or end growths of branches should not be pruned in the summer, only the laterals or side growths. The leaders should be cut back by half or a quarter.

## PRUNING, RINGING AND THINNING

depending on their growth (the stronger the growth the lighter the cut) in March or April.

This summer pruning sounds drastic, but is very effective when properly done.

## THINNING

(a) *Branches*.—It may be advisable to grow trees on what is usually called the regulated or thinned system. In this case all that is done is to cut out the crossing and rubbing branches and the dead and diseased wood, the pruner's object being to keep the branches fairly well spaced and to ensure that plenty of light and air reach all parts of the tree. This system is usually adopted in the case of standard trees after they are five or six years of age.

(b) *Fruit*.—To grow large fruits and to help to ensure regular cropping it is necessary to space out apples, pears and plums when they reach the small walnut stage. Eating varieties of apples should be thinned to 4 in. apart and cooking apples to 6 in. apart. Plums should be thinned to 2 in. apart and the small-fruited varieties of pears to 5 in. apart—*e.g.*, Hessle, Fertility and Doyenné d'Été.

Fruit thinning may be done with a short pair of scissors, or just by hooking two fingers round the fruitlet and pushing it off its stalk by means of the thumbnail.

With apples the centre apple, known as the 'king' fruit, in every cluster should be removed, for this is always abnormal and never keeps so well.

Thinning is usually carried out in June and early July, and it is seldom that beginners thin enough. It may seem a shame to remove hundreds of little fruits when they are forming in this way, but the trees benefit as a result because they are not exhausted, and the owner benefits

## FRUIT GROWING AND PRESERVING

because he gets fruit of better quality, colour, flavour and size. Further, fruit thinning helps to prevent the biennial-bearing habit.

The fruits of the large dessert varieties of gooseberries, such as Careless, Leveller, Shiner and Princess Royal, should also be thinned when green and fit to use in a pie.

## Chapter III

### ROOT STOCKS, PLANTING, POLLINATION, TYPES OF TREES AND BUSHES

As has already been suggested in Chapter I, it is most important to study the root-stock question when buying the trees. They are raised on the whole by budding or grafting the variety, known as the scion, on to a root stock which is generally raised vegetatively by layering or stooling. This ensures that the root systems of any particular 'numbered' pedigree stock are uniform in their behaviour and so ensure uniformity in the variety which is grafted on to them.

Not only is the size of the fruit tree controlled by the root stock, but the quality of the fruit and the time that the tree takes in coming into bearing as well.

#### APPLES

The No. 9 stock known as *Jaune de Metz* is perhaps the most dwarfing stock used and therefore is ideal for small gardens. It makes a healthy small tree which comes into bearing as a rule in two or three years' time. It generally produces large-sized fruits of high colour. Some varieties do not form very satisfactory trees on No. 9 stock.

The No. 2 stock (*Doucin*) is not so dwarfing as No. 9

## FRUIT GROWING AND PRESERVING

and is suitable for varieties which are naturally weak in themselves. The No. 1 stock (Broadleaf) is somewhat stronger than No. 2 and is also used for producing trees of medium size. It gives probably a rather brighter colour to dessert apples. It is too strong a stock, however, to use in the small garden.

Those who want half-standard or standard trees should purchase them on stocks No. 12 or No. 16. Trees on No. 16, on the whole, come into bearing quicker than trees on No. 12.

### CHERRIES

Probably the best stock for sweet cherries to be grown as standards or half-standards is the Gean, and for bush or fan-trained trees, the Mazzard. The Stockton Morello and the Kentish stock it is hoped will be used in future as the dwarfing types if they prove satisfactory. They will then be to the cherry what the type 9 is to the apple. The best stock for bush or fan-trained sour cherries at the present time is probably Mahaleb.

### PEACHES AND NECTARINES

The most common stock for apricots is the Common Mussel, which has a dwarfing effect. Peaches and nectarines are usually grafted on to Common Mussel, Brompton, or Broad Leaved Shining Mussel.

### PEARS

For small gardens or trees that are to crop early, Quince C should be used. Little trees on this stock are healthy and come into cropping as a rule three years earlier than on any other known root stock.

The Quince A stock (Angers' Quince) is a somewhat

## ROOT STOCKS, PLANTING AND POLLINATION

stronger stock and may be used for very weak-growing varieties.

Certain varieties of pears do not graft easily on to quince stocks, and an intermediate therefore has to be used. A variety like Pitmaston Duchess or Fertility is first budded or grafted on to the quince stock, and the variety required, such as Williams' Bon Chrétien, is then grafted or budded on to the intermediary. This gets over the difficulty of the incompatibility.

### PLUMS

Where strong growth and regular cropping are required Myrobalan B is used. The Pershore stock gives a less vigorous tree, combined with heavy cropping. Common Plum is the more dwarfing stock, being particularly successful with Victorias. Czar cannot be grafted on to this stock.

### PLANTING

It is most important not to try and plant too many trees in a garden. When this is done the trees are starved of air and light and of plant foods also. Overcrowding encourages disease and attacks of insect pests.

In addition, the shade from the trees and bushes makes it difficult to grow other crops underneath. It is never really advisable to try and grow vegetables in between fruit trees, for the normal heavy manuring of the vegetables only sends the fruit trees into excessive growth, while the spraying the fruit trees ought to have may easily ruin the vegetable crops down below. It is always better, therefore, to have a little fruit plot on its own, and to interplant trees with bushes or with canes, and thus to save room. Walls, however, can always be used for grow-

## FRUIT GROWING AND PRESERVING

ing trained forms of trees, not only the fences of the garden but the walls of the house itself. May I underline this latter remark?

The table below gives a rough guide to the distance apart the trees and bushes ought to be planted:

Apples on very weak stocks, 8-10 ft.

Apples on strong stocks, 18-20 ft.

Apples, half-standards and standards, 24-30 ft.

Pears on Quince C, 10 ft.

Pears on Quince A, 15 ft.

Bush plums, 18 ft.

Half-standard plums, 20 ft.

Morello cherries, bush 15 ft.

Half-standard and standard cherries, 30 ft. at least.

Fan-shaped trees of all kinds, 14 ft.

Blackberries, 14 ft.

Black currants, 6 ft. one way, 4 ft. the other.

Gooseberries, 5 ft. by 5 ft.

Loganberries, 10 ft. by 12 ft.

Raspberries, rows 5 ft., canes 2 ft. apart.

Red currants, 5 ft. by 5 ft.

Strawberries, rows 2 ft. 6 in. Plants 18 in. apart in the rows.

Cordons, apples, rows 5 ft., trees 2½ ft. apart.

Cordons, gooseberries, rows 5 ft., plants 1 ft.

Cordons, red currants, rows 5 ft., plants 1 ft.

### PREPARING THE HOLES

Holes 3 ft. by 3 ft. should be dug for apples, pears, plums and cherries, but there is no need for them to be deeper than 8 in. In fact, in the case of very heavy land a hole 2 in. deep is usually ample.

With soft fruits there is no need to have a hole deeper than 6 in. or wider, perhaps, than 8 in.

### TIME OF PLANTING

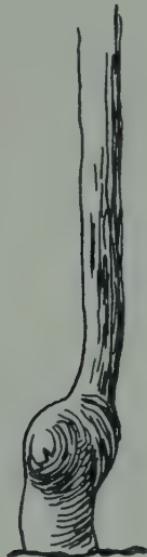
Planting should be carried out any time between November and the beginning of March. Autumn planting, however, is *much* to be preferred, for it gives the roots

## ROOT STOCKS, PLANTING AND POLLINATION

of the trees the chance of getting established before the following year.

### UNION OF STOCK AND SCION

When planting apples, pears, plums and other stone fruit, be sure not to bury the union of the stock and scion. That is the point where the variety is grafted or budded on to the root stock. If this union is buried, then the variety starts to make roots and thus ruins the effect of the stock.



*Scion planting above ground. Union of stock and scion is well above soil level (union is over-emphasised).*

Trees that 'scion root,' as it is called, change in character, and cropping is delayed as a result. In addition, tall ungainly trees are generally produced.

### MODE OF PLANTING

If possible, dig the holes out on the day that the trees

## FRUIT GROWING AND PRESERVING

are to be planted. When the trees arrive from the nursery, unpack them and heel them in the ground so that the roots are completely covered with soil. This prevents them drying out.

When ready to plant, a little mound should be made in the centre of the bottom of the hole on which the base of the main stem may 'sit.' The roots should then be spread out evenly all round the hole like the rays of the sun, so that there will be even anchorage on all sides. The soil should then be put into the hole, a little at a time, the planter treading well, so as to make sure that the tree is in firmly. When the hole is full the soil should be left with a slight mound towards the centre. This allows for settling down later.

Roots that are damaged when they arrive should be pruned back with a sharp knife. Trees that are planted in grass should have the removed turf buried upside down *above the roots*, a little more soil being placed on top.

When planting trees against a wall, the roots should be put in as far from the wall as possible. The stems should slope slightly towards it, otherwise the roots tend to suffer from lack of moisture, because the wall absorbs this and evaporates it.

## POLLEN AND POLLINATION

It must be realised that there are a very large number of fruit trees which are self-sterile. This term 'self-sterile' is not always understood. It means, in fact, that the pollen from its own 'male part' of the flowers cannot cause the 'female part' of the same flowers to set. The flowers will open, there may be plenty of blossom, but no fruit results.

## ROOT STOCKS, PLANTING AND POLLINATION

It is necessary, therefore, to make certain that there is what may be called a 'husband'—*i.e.*, another suitable pollinating variety—somewhere nearby. It will do if this variety is in another garden, but it is unwise to take any risks, therefore plant a suitable 'husband' variety in your own garden.

In some cases it is only necessary to ensure that varieties are planted which flower round about the same time, but in other cases it is necessary to have a particular husband, this being true more of cherries than apples and pears. To obviate the need of cross-pollination it is, of course, possible to plant varieties which are generally considered self-fertile, and many gardeners will no doubt take care to do this.

Unfortunately, what are considered the best varieties are, as a rule, self-sterile. For instance, the *Doyenné du Comice* pear and the *Cox's Orange Pippin* apple; the former needs *Glou Morceau* as a husband and the latter *Worcester Pearmain* or *James Grieve*. The plum *Oullin's Golden Gage* is the right pollinator for *Coe's Golden Drop*, and with cherries *Governor Wood* is the right pollinator for *Early Rivers*.

If you have trees in your garden which flower profusely and fail to set fruits, consider immediately the problem of pollination, and when planting more trees take care to include pollinators as well as the varieties you wish to grow. If necessary, plant in addition pollinators for the existing varieties you have.

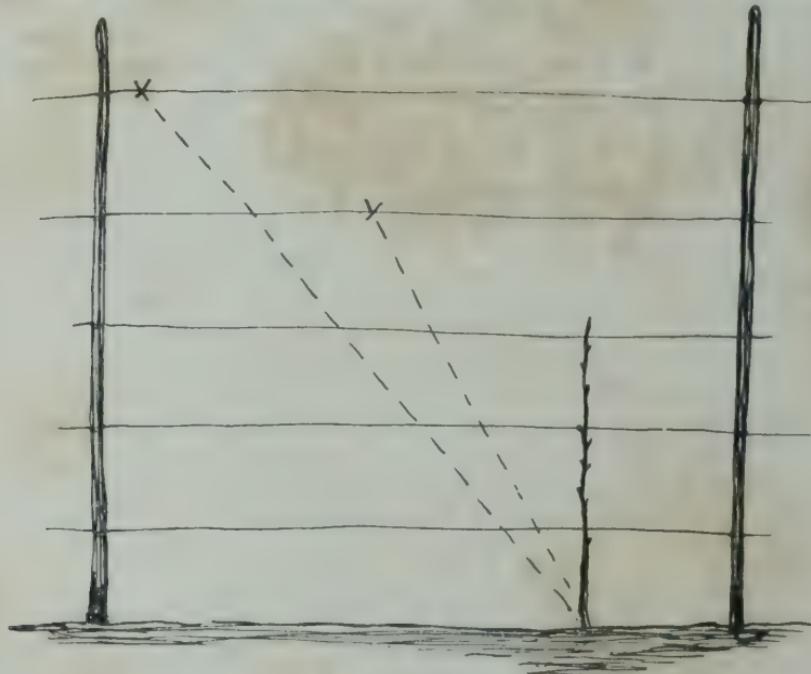
## TYPES OF TREES AND BUSHES

There are various types of trees and bushes that can be planted, and it is as well to understand the meaning of the terms used by gardeners.

## FRUIT GROWING AND PRESERVING

*Bush Trees.*—These are most suited to the ordinary garden and are best pruned so that they have an open centre which is somewhat goblet-shaped. They should be on a stem or leg of just over 2 ft. in the case of apples and pears and just over 3 ft. with plums and cherries.

*Bushes, Soft Fruits.*—Gooseberries and red currants may be grown in bush form and should be on a stem or



*Cordon spacing and lowering. Cordon planted upright, six months later trained at 45°, two years later at 30°.*

leg 4 in. or more high. Black currants should not be grown on a stem. All the branches should come straight up from the roots. This is called growing the bushes as stools.

*Cordons.*—These are trees with single stems, and are usually grown at an angle of 45 degrees to start with (and maybe later at 30 degrees), trained against fences or wires. They should be on dwarfing stocks, and the side

## ROOT STOCKS, PLANTING AND POLLINATION

growths should be pruned back so that short fruiting spurs are developed all the way along the stems. They produce high-quality fruit and enable the gardener to have a large selection of varieties in quite a small space.

*Cordons, Soft Fruits.*—Red currants, white currants and gooseberries may also be grown on the cordon system. They, however, grow on their own roots and do not have to be grafted on to dwarfing stocks.

*Dwarf Pyramids or Fuseaux.*—A very modern type of tree, a cross between a bush and a cordon. A centre branch is allowed to grow up and tiers of short side branches are allowed to grow. They take up less room on the whole than bushes and do not need the wiring and tying in of cordons. Those who plant them, however, have to study the special pruning system by which they are developed.

The great advantage of the system, perhaps, is that the trees come into bearing very early.

*Espaliers and Fans.*—These are usually grown on stems 18 in. high, the branches being trained out so that they can be grown against walls, fences or trellis wires.

Apples and pears are grown as espaliers, when several tiers of horizontal branches are trained at right angles to the main stem.

The plums, peaches, apricots, cherries and figs are usually trained as fans, the branches radiating out evenly from a main stem 18 in. or so high.

*Half-standards and Standards.*—These are not suitable, on the whole, for small gardens. Half-standards, however, are usually planted in grass or in poultry runs. They have a stem of 4 ft. 6 in. before the branches develop. Used principally for apples, pears and plums.

Standards are usually used in large grass orchards

## FRUIT GROWING AND PRESERVING

where stock may graze underneath. They have stems at least 5 ft. 6 in. and are used for apples, pears, plums and cherries.

It is usually a great many years before half-standards and standards come into bearing.

*Maidens*.—These are one-year-old trees.

*Cut-backs*.—Cut-backs are usually old trees that have been in a nursery for years and have been cut back and cut back. Though they may be sold as five- or six-year-olds, they are not as valuable as those two years of age.

### STAKING AND PROTECTION

It may be necessary to afford trees some protection against rabbits and hares. These can easily bite most of the bark from around a young tree in the winter and so ruin its chances of growing properly in a night. It is necessary, therefore, either to erect a good wire-netting fence right the way round the orchard or garden or to put a ring of wire netting around each tree. The gauge should be at least 18, the mesh  $1\frac{1}{4}$  in. and the height 4 ft. When putting the netting around the garden it is necessary to bury it at least 6 in. in the ground and to curve the netting slightly outwards, away from the enclosure.

When wire netting is difficult to get, or expensive, the stems of the trees may be painted in October with special deterrents such as Trepan, which can be supplied by local horticultural sundriesmen or chemists. These deterrents are sold under various proprietary names.

It is most important to stake the trees at planting time, for it is only by ensuring that they are firmly anchored that new roots can develop. Standards and half-standards should have two stakes, one on either side, with a cross-

## ROOT STOCKS, PLANTING AND POLLINATION

bar nailed at the top, and if necessary another halfway down in order to help straighten the stem if this is crooked. The actual tying can be done with the aluminium Kuma tree tie or the plastic 'Rainbow' tree straps and spacers.

For bush trees, stakes 4 ft. long should be driven into the ground obliquely at an angle of 45 degrees pointing in the direction of the prevailing wind.



*Staking with 'Rainbow' Tie.*

It is most important to prevent the stake from chafing the tree, and the use of a strip of sacking or old cloth around the stem is, therefore, imperative, unless the above-mentioned special ties are used. Farmers often use straw 'ropes,' and these are quite suitable, as are strips of old bicycle or motor-cycle rubber tyres. It is necessary to take off all string ties once a year before winter spraying and to re-tie afterwards. With the new plastic or aluminium ties, however, the loosening process is done in a second. In this way the gardener prevents the growth of the stem



*Showing how a fruit tree should be tied to a stake - note the sacking.*

## ROOT STOCKS, PLANTING AND POLLINATION

being restricted and insect pests from harbouring in the  
trunk used.

It is as well to use stakes that have been impregnated  
with creosote, or whose bases have been stood in boiling  
tar for some hours. Care should be taken to renew stakes  
when they become broken, for in far too many cases the  
author has seen the trees supporting the stakes, instead of  
the stakes preventing the trees from rocking about.

## Chapter IV

### GENERAL FRUIT HYGIENE

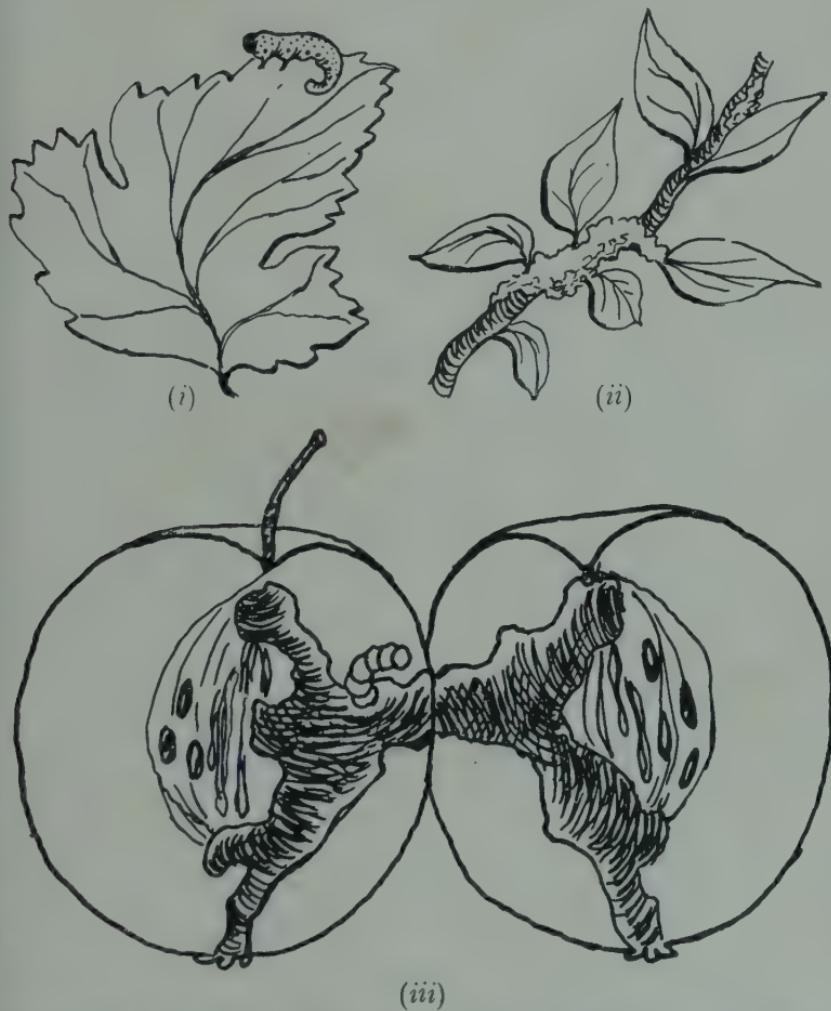
THERE is a very large book which deals with all the insect pests that attack fruit trees and bushes. There is another equally large tome which deals with the fungus diseases which attack fruit trees and bushes. Both of these are quite frightening to read! It is fortunate indeed that all the pests and diseases mentioned there do not attack all our fruit trees each year!

It is, however, necessary to be prepared for all eventualities, and it is advisable to carry out routine methods of orchard hygiene year after year. Towards preparedness, have a garden medicine chest stocked with the more important fruit 'medicines,' so that these can be used directly they become a necessity.

Too often the gardener finds that his trees or bushes are being attacked by some particular pest or disease, and by the time he has ordered the right remedy from his horticultural sundriesman and this has arrived it is almost too late to spray to do any good. The garden medicine chest should contain: (1) nicotine, a poison, which should be kept in a bottle, properly stoppered; (2) liquid derris, which is non-poisonous, and spells death to aphides, caterpillars and many other insects; (3) lead arsenate, which may be stored as a powder or a paste or even in colloidal form, for this can be used to poison leaves or young fruits that are being eaten by caterpillars; (4) lime sulphur, a

## GENERAL FRUIT HYGIENE

brownish liquid which is an excellent fungicide for controlling such diseases as scab. It also kills the big bud mite on black currants and various red spiders when used



A group of pests: (i) Gooseberry caterpillar, (ii) Woolly aphid on youngish wood, (iii) Sawfly maggot in apple.

at the correct time. (Those who like dusting—and this does save water cartage—should always store such dusts as copper-lime, derris and sulphur.) (5) Bordeaux mixture

## FRUIT GROWING AND PRESERVING

or Burgundy mixture, two fungicides which are used for controlling scab on trees that are subject to lime-sulphur scorch; (6) tar distillate wash, a tar oil of miscible type which should be used during the dormant season at from 5-10 per cent. dilution. This wash kills the eggs of the apple sucker, aphides, as well as most of the eggs of the winter moths and tortrix moths, and helps to control brown rot, as well as removing 'scales' and lichen.

Dinitro-ortho-cresol, sometimes known as D.N.C., should be used at  $7\frac{1}{2}$  per cent. dilution just after the buds break, to kill the winter eggs of red spiders and capsid bugs, and to control other pests in cases where the tar-oil wash could not be used.

### SPRAYING AND DUSTING MACHINES

There are spraying and dusting machines to suit every type of garden and almost every size of purse. There are small dusting machines costing round about 10s. made by Messrs Waldrons of Stratford-on-Avon, and inexpensive hand-spraying machines such as the 'Solo' made by the F.N.P. Manufacturing Co, Gracechurch Street, London. This sprayer costs round about £2.

There are larger dusting and spraying machines of the knapsack type made by such firms as Cooper, Pegler and Co. These cost about £6. There are bucket pumps, something like stirrup pumps, headland pumps which maintain an average pressure of 200 lb. per sq. in., and wheeled types of spraying machines with big containers for the wash.

### HINTS ON SPRAYING

See that the tree is covered from top to toe. Do not miss a single little twig. In the summer see that the under



*Spraying cordon apples with a Solo sprayer in order to control scab.*

## FRUIT GROWING AND PRESERVING

surfaces of the leaves are covered as well as the upper surface.

Spray on a fine day, and when it is likely to be fine for a day or two after spraying. Do not spray in frosty weather.

At the end of each day's spraying wash out the machine, however small, with plenty of cold water.

When spraying, wear an old coat and hat or a boiler suit. Have a pair of pliers in your pocket and a pin or two, in case the nozzles get blocked or washers need renewing. Those who have tender skins when spraying in the winter should vaseline their faces and hands and wear a pair of goggles or glasses.

See that the strainer is working properly, for it is the imperfect straining that so often causes the nozzles to be blocked.

### HINTS ON DUSTING

Always dust on a dry day. Don't be afraid of putting up a big cloud so as to cover the leaves top and bottom. Don't mind wasting a little dust in this way.

Choose a still day or a day when there is just a little breeze. Dust from the side of the tree where the breeze will take the insecticide or fungicide right over it.

When using derris dust be careful to see that it doesn't drift on to a pond containing fish, or these will be killed.

### GENERAL ADVICE ON HYGIENE

Do not allow the branches of your trees and bushes to be overcrowded. See that they are spaced out and are thus wide enough apart to allow the sun and air to reach them on all sides. This means efficient pruning.



Showing the disease known as canker. This can be controlled by painting with Medo.

## FRUIT GROWING AND PRESERVING

Do not allow trees and bushes to grow in an overcrowded, unhealthy condition, which only makes them liable to attacks by pests and diseases. This means the grubbing up of sufficient trees and bushes to make room for the others.

Remove all diseased, dying and dead branches immediately they are seen.

Keep the hedges regularly cut, and be prepared in the case of prunus and quick hedges to spray them in the winter-time with a 5 per cent. solution of a tar distillate wash, for they often breed aphides.

Do not plant strawberries under trees where they may get the drip from the sprays and washes. Try not to mix up apples and plums, for the latter will be in full bloom when it is desired to spray the apples with lime sulphur.

Keep the trees properly manured, for healthy firm foliage is able not only to resist trouble but also to overcome it.

## Chapter V

### APPLES

UNDoubtedly the apple is the most popular fruit in Great Britain. No country in the world grows it better, though New Zealand does come a very good second.

#### OIL

Does well on most soils, but hates badly drained land or ground that has any impervious layer 3 or 4 ft. down. Such layers, which might be iron sandstone or limestone, should be broken up with a crowbar before planting the trees.

It is never a good plan to plant apples in a heavily manured garden or allotment, for as a result the tree makes too much growth, and fruiting is delayed. Those fruits which are produced will be soft and will not keep well. Under such conditions cooking apples do better than dessert varieties.

Sandy soils are usually lacking in potash, and so generous doses of sulphate of potash have to be given each year. When this is unobtainable wood ashes or flue dust have to be used very liberally.

#### EST TYPES TO GROW

For the poultry run or for the grass orchard plant the half-standard or standard. For the garden plant dwarf pyramids, bushes or cordons.

### THE CORRECT STOCKS

It is just as important to get a guarantee from the nurseryman that the tree is grafted or budded on to a particular root stock as it is to ensure having a certain variety. Few garden owners want to wait eight to ten years before they get any crop, and yet they often have to do this because they plant trees growing on unknown stocks or specimens which are grafted on to very strong stocks.

It is most important, therefore, that careful study should be made of the section dealing with root stocks in Chapter III.

### PRUNING

Winter pruning should be done during the latter half of November and during the month of December. The earlier it is done the better, for then it allows winter washing to be carried out with a minimum of expense, for there is less wood to cover.

As hard winter pruning is one of the main reasons for the delaying of cropping, far less pruning will be done in the future than in the past. Leaders or end growths need be only lightly tipped after the fourth year from planting and side growths of medium strength may be left alone. Such treatment causes even the strongest varieties, such as Bramley Seedling, to come into cropping fairly early.

Learn to differentiate between the varieties that naturally bear their fruit at the ends of longish thin lateral shoots, called dards or dods, and those which produce their fruit on artificially produced or naturally formed fruit spurs close to the main stem. The former group are known as tip bearers and the latter group as spur bearers. Typical

## APPLES

spur varieties are Cox's Orange Pippin, Early Victoria, Edward VII, Lord Derby, Ribston Pippin and James Grieve. Typical tip bearers are Irish Peach, Worcester Pearmain, Grenadier, Bismarck, Gladstone and Barnack Beauty.

Some varieties naturally grow upright and others spread out their branches. Naturally the upright growers need encouraging to spread and the spreading growers may need keeping upright. The pruning of these two types therefore differs somewhat, the leaders of the spreaders being cut just above an inward-growing bud and those of the upright-growing types to just above an outward-pointing bud. The more commonly grown 'spreaders' are Lane's Prince Albert, Stirling Castle, Bramley Seedling, Gladstone and Blenheim Orange. Typical varieties with an upright habit of growth are Lord Derby, King of the Pippins, Worcester Pearmain, Edward VII, Annie Elizabeth and Christmas Pearmain.

### SUMMER PRUNING

A successful method of summer pruning is described in Chapter II. This may be adopted with all apple varieties, except perhaps the tip bearers, though even these as a rule respond remarkably well to this particular treatment.

### MANURES

It is very difficult to be dictatorial about manures. Usually, however, in the garden it is necessary to ensure that the trees do not suffer from lack of potash. This means the application of sulphate of potash at 2 oz. to the square yard each November. Where potash has not been given in the past for the first four years it may be advisable to apply as much as  $\frac{1}{4}$  lb. to the square yard.

## FRUIT GROWING AND PRESERVING

When sulphate of potash is difficult or impossible to obtain, finely divided wood ashes should be used instead at six times the quantity advised for sulphate of potash, or flue dust at twice the quantity.

Where trees are growing on grass it may be advisable to give nitro-chalk at the rate of  $1\frac{1}{2}$  oz. to the square yard



*Applying fish manure, containing a high potash content, along a row of cordons.*

in January and  $1\frac{1}{2}$  oz. to the square yard in May. It is very seldom necessary in a private garden to give nitrogen to apple trees, though in a year when it is seen that there is every chance of a very heavy crop it may be a good plan to apply dried blood in January at 2 oz. to the square yard.

Steamed bone flour may be given every three years at

## APPLES

3 oz. to the square yard, either in the winter or early spring.

The fruit grower must be guided by the trees themselves. If the leaves are pale green and small, if the fruit is highly coloured, keeps well and is sweet, then nitrogen deficiency must be suspected and dried blood may be



*A rotary fan dust gun used on cordons.*

given. If, on the other hand, the trees are vigorous, the leaves large and dark green, the fruit badly coloured, greasy and of poor keeping quality, excess of nitrogen must be the cause, and all forms of nitrogen, whether chemical or organic, should be withheld.

If the trees are not making much growth and the leaves

## FRUIT GROWING AND PRESERVING

have a brown margin, this is a symptom of leaf scorch and is a sure sign of potash deficiency.

### SPACING OR THINNING FRUIT

Chapter II deals generally with thinning, which aims at preventing the trees from exhausting themselves, thus causing the ultimate size of the fruits to be large and ensuring a uniform sample. Most varieties of apples need thinning when they are about the size of a walnut, the exceptions being varieties like Charles Ross, which tend to produce over-large fruits anyway.

Thinning and spacing should be considered a normal fruit operation, the thinnings being used if desired for apple jelly or jam.

### PICKING

Apples are far more delicate than people imagine. They are easily bruised. A bruise is too often the beginning of a disease, a disease leads to a rot, and much loss results. No apple should be grasped with the thumb and finger. However carefully this is done a slight bruise is bound to result. The fruit should be grasped with the palm of the hand, and when lifted the stalk should come away from the spur without any pulling. If tugging is done the stalk or strig may be left on the tree, and then the fruit soon rots or next year's fruit bud will be damaged or broken off.

Apples should be picked at the right time. This varies from variety to variety. When specimens are picked too early they shrivel and thus lose their size and flavour.

If baskets are used they should be well lined with smooth sacking or thick material so that the apples cannot possibly be bruised or scratched by the ribbing. It is

## APPLES

etter to use a pail painted inside if possible with a thick enamel paint. It can then be easily kept clean and washed out and the sides are perfectly shiny and smooth. Some people use a white enamel pail instead.

The apples should be placed into such a container and not be dropped in. They should then be transferred into an orchard box or on to a tray for storage.

Some varieties, like the Rev. W. Wilks, Grenadier and Early Victoria (all cookers), may be picked long before



*Typical scab disease  
on apple.*

they are ripe and thus provide early cooking apples. This, however, is the exception rather than the rule.

## STORING THE FRUIT

It is better not to choose an attic, loft or spare room for storing fruit, for wooden floors provide too dry an atmosphere. If such rooms have to be used the floor should be syringed every three days with water. Attics are also unsuitable, as they are apt to get too warm during the day and too cold during the night. A cellar or underground vault is quite suitable if it is dry and well aired. A rain

## FRUIT GROWING AND PRESERVING

and frost-proof outhouse is also good. It should be well ventilated and properly insulated so as to obviate rapid change of temperature inside. Rough straw thatch is often used for this reason.

The atmosphere of the storehouse should never be stagnant, though it should be on the moist side. The temperature should be round about 45 degrees in the summer and remain at 40 degrees in the winter. It will be necessary to prevent the entry of rats and mice by wiring an earthen floor which in all other respects is ideal.

After picking it is advisable to allow the apples to sweat for ten days before being taken into the store. During rainy weather it may be necessary to put the fruit straight into the store, and in this case all the ventilators should be thrown open so as to allow the air to circulate. After ten days or a fortnight the store should be closed down for the winter.

### WRAPPING

Apples which are wrapped in oil-impregnated paper before being stored keep longer than apples which are kept in the ordinary way. Where oiled wrapping papers are not available ordinary paper such as newsprint may be used instead, though this does not give as good results.

### CLAMPING

In glut years it is possible to store apples out of doors, particularly such good keeping varieties as Bramley Seedling, Annie Elizabeth and Newton Wonder. They can be put in heaps on straw to a height of about 3 ft. and on top of the heap a 3-in. layer of straw should be laid. After the fruit has sweated—that is in about three weeks—the clamp or head can be cased over with soil to a depth of

## APPLES

in. all round. The earth should then be smoothed so that the rain is deflected away, and a thick twist of straw allowed to appear through the top of the soil and acts as a ventilator.

### VARIETIES

How difficult it is to choose varieties! 'One man's meat another man's poison.' Most people have their 'pets,' and all that can be done in a book of this size is to choose those which the writer has known for years, and which have given good results in all parts of the country.

These are included under various headings:

#### SHORT LIST SELECTED FOR SMALL GARDEN (In order of use)

<i>Dessert</i>	<i>Culinary</i>
Tydemann's Early Worcester	Early Victoria
Worcester Pearmain	Grenadier
Laxton's Exquisite	Arthur Turner
James Grieve	Rev. W. Wilks
Fortune	Lord Derby
Ellison's Orange	Lane's Prince Albert
Laxton's Superb	Edward VII
Cox's Orange Pippin	Encore
Winston	Newton Wonder

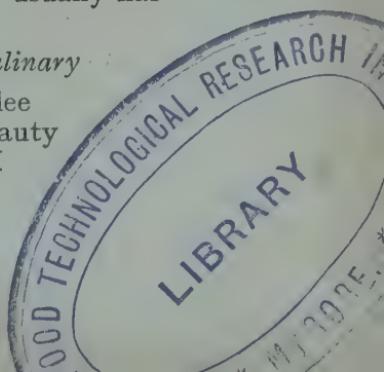
#### APPLES WHICH WILL EITHER EAT OR COOK

Allington Pippin	Charles Ross
Duke of Devonshire	Herring's Pippin
Rival	Wagener

#### VERY LATE BLOSSOMING VARIETIES

(These should be planted in a garden which usually has late frosts)

<i>Dessert</i>	<i>Culinary</i>
Court Pendu Plat	Royal Jubilee
Orleans Reinette	Crawley Beauty
American Mother	Edward VII



## FRUIT GROWING AND PRESERVING

### EARLY VARIETIES WHICH SHOULD BE USED IMMEDIATELY AFTER PICKING

<i>Dessert</i>	<i>Culinary</i>
Irish Peach	Arthur Turner
Miller's Seedling	Early Victoria
Mr Gladstone	Lord Grosvenor
Devonshire Quarrenden	
St Everard	

### VARIETIES WHICH KEEP WELL

<i>Dessert</i>	<i>Culinary</i>
Adam's Pearmain	Annie Elizabeth
Cox's Orange Pippin	Bramley Seedling
Laxton's Superb	Newton Wonder
Winston	Encore
Orleans Reinette	Monarch
Upton Pyne	Lane's Prince Albert
St Cecilia	Wellington
May Queen	
Easter Orange	

### CRIMSON-COLOURED VARIETIES

<i>Dessert</i>	<i>Culinary</i>
Gascoyne's Scarlet	Red Victoria
Duchess's Favourite	Emperor Alexander
John Standish	Crimson Bramley
Lord Lambourne	Baumann's Reinette
Red Coat Grieve	Norfolk Beefin
Worcester Pearmain	Mère de Ménage

### SPRAYING PROGRAMME

<i>Month</i>	<i>What to do</i>
October	Apply a grease-band around the trunk of each tree. This, by preventing the female moth crawling up, stops caterpillar attacks.
December	Spray tar distillate wash 5 per cent. solution to clean tree and kill eggs of green fly, apply sucker, scale insects, etc.

## APPLES

<i>Month</i>	<i>What to do</i>
End March	Spray with D.N.C. using $7\frac{1}{2}$ per cent. solution. This prevents attacks of capsid bugs, red spider and winter moth caterpillars.
April	Spray with lime-sulphur solution—1 pint lime sulphur, 30 pints water—soon after buds have opened, to prevent the scab disease.
Early May	Add $\frac{1}{2}$ lb. lead arsenate paste to each 25 gall. of mixed wash to kill baby caterpillars.
Late May	Spray with lime sulphur same strength as above when blossoms are in the pink stage but before they open. This is a continuance of the scab prevention programme. Add lead arsenate as advised above. Spray with lime sulphur, 1 pint of the concentrated brown liquid to 100 pints of water. This is a continuance of the scab prevention programme, but also prevents red spider attacks. N.B.: It is impossible to spray Stirling Castle and Beauty of Bath with lime sulphur after the blossoms have fallen. A Bordeaux mixture spray should be used instead or, better still, copper-lime dust. Add lead arsenate as advised above to kill codlin moth caterpillars and other caterpillars. Add nicotine at the rate of 1 oz. per 10 gall. of mixed wash to kill the saw-flies which cause maggots in the fruit, as well as capsid bugs and green flies.
Mid-June	If you are very energetic—yet another spraying with lime sulphur, 1 pint to 100 pints of water, to make certain that the apples will not be scabby and to kill any red spiders that may remain.
Late June	Spray with lead arsenate paste in water, using $\frac{1}{2}$ lb. to 12 gall. of water, to make certain that no codlin moth maggots will cause maggoty fruit.

## Chapter VI

### PEARS

THE pear on the whole grows better in the south of England than in the north, though it always succeeds fairly well near river valleys, where the temperature is equable and where there are no early frosts. Grown in gardens, especially against walls, a pear tree can be given all the protection it needs at blossoming time, even in the north, and so regular cropping may be assured. Don't forget the pollinator 'mate,' though.

#### SOIL

The pear prefers the well-drained medium loam. It dislikes shallow soil over gravel or chalk and a badly drained clay.

It likes a sheltered and sunny situation and a dry, warm ripening season. For this reason the later ripening sorts of pears seldom do well north of the Thames.

Pears need protection from the east and north, but should not be planted against a north wall, because they like the maximum amount of sun.

#### BEST TYPES TO GROW

On the whole pears are slower in coming into bearing than apples. In gardens they may be conveniently grown as bushes, cordons, dwarf pyramids or trained espaliers. Pears as standards should only be planted in large orchards.

## PEARS

Cordons are particularly suitable, for pears spur readily and are easy to pick and protect when grown in this way.

### CORRECT STOCKS

It is most important to purchase trees on guaranteed named stocks (see Chapter III).

Because it makes for a small tree and immediate cropping most gardeners prefer the Quince C. For bush trees or espaliers the Quince A stock will do.

Again it is necessary to emphasise that pears must not be planted deeply so as to bury the union of the scion (or variety) and the stock (or root system). Plant, in fact, so that this union is at least 2 in. above soil level.

### PRUNING

On the whole the same rules of pruning apply to pears as to apples (see Chapter V).

If it is pruned too hard in its young years, cropping is delayed. When, however, two good heavy crops have been produced, it is necessary to prune fairly hard once more so as to encourage new shoot growth. After many years pears are apt to become covered with hundreds of fruit buds, and these must be thinned out. Trees which carry an overdose of blossoms seldom set these satisfactorily.

On the whole, harder lateral pruning may be carried out with pears than with apples.

As in the case of apples, some varieties are spreading in their growth and others upright. They should therefore be pruned accordingly, the upright varieties having the leaders cut to buds pointing outwards and the spreading varieties *vice versa*.

Typical upright varieties are Comice and Conference. Typical spreaders are Beurré d'Amanlis and Durondeau.

### SUMMER PRUNING

This may be carried out with great success as advised for apples.

There is sometimes a difficulty with Pitmaston Duchess, Laxton's Superb and Beurré Hardy, which tend to make tremendous wood growth, but even with these varieties, if summer pruning is persisted with, ample fruit buds are produced.

### MANURES

Pears appreciate organic manures and these, in the form of farmyard manure, composted vegetable refuse or strawy poultry manure, may be forked in shallowly around the trees in November and December. In February sulphate of potash should be applied at 1 oz. to the square yard or wood ashes at  $\frac{1}{2}$  lb. to the square yard. In the spring, if it is seen that the trees have set a heavy crop, a complete artificial manure with an organic base, such as a fish manure, may be added at 4 oz. to the square yard all around the trees as far as the branches spread.

### SPACING OR THINNING

Pears should never be allowed to touch one another. Thinning or spacing should be carried out when the fruits are about the size of a walnut (for further details, see page 21).

### PICKING

The earlier varieties should be gathered directly the fruits come away from the spurs when lifted in the palm of the hand. The later keeping varieties may be allowed to hang on the trees until the end of October. They should

## PEARS

then be picked carefully as advised for apples (see Chapter V) and may be stored in a similar manner.

It is interesting to note that research has shown the importance of keeping pears in a different store to apples. If this is done they store better, and longer, and are richer flavoured.

### VARIETIES

There are hundreds of varieties to choose from, but only those are listed which are less particular in their requirements than others.

Almost all kinds of pears are eaters, the only important cookers being Catillac and Uvesdale's St Germain.

#### SHORT LIST FOR SMALL GARDEN

Laxton's Superb	William's Bon Chrétien
Dr Jules Guyot	Conference
Marie Louise	Durondeau
Joséphine de Malines	

#### GOOD CORDON PEARS

Conference	Doyenné du Comice
Beurré Ernest	Émile d'Heyst
Glou Morceau	Laxton's Superb
Marie Louise	William's Bon Chrétien

#### GOOD BUSH PEARS

Beurré Alexandre Lucas	Conference
Durondeau	Émile d'Heyst
Laxton's Superb	Marguerite Marillat
Thompson's	William's Bon Chrétien

#### PRINCIPAL SELF-STERILE VARIETIES

Beurré d'Amanlis (E.F.)	Beurré Diel (E.F.)
Doyenné d'Été (E.F.)	Souvenir de Congrès (E.F.)
Catillac (M.F.)	Clapp's Favourite (M.F.)
Émile d'Heyst (M.F.)	Joséphine de Malines (M.F.)
Doyenné du Comice (L.F.)	Glou Morceau (L.F.)
Beurré Bosc (L.F.)	

E.F.=Early Flowering.

M.F.=Mid-season.

L.F.=Late Flowering.

## FRUIT GROWING AND PRESERVING

### KEEPING PEARS

Winter Nelis	Vicar of Winkfield (cooker)
Joséphine de Malines	Émile d'Heyst
Doyenné du Comice	Conference
Catillac (cooker)	Beurré Easter
Beurré Alexandre Lucas	

Pick in October and use as specimens ripen in store.

### THE HARDEST PEARS

Conference	Émile d'Heyst
Hessle	Jargonelle
Louis Bon de Jersey	Pitmaston Duchess

### SPRAYING PROGRAMME

<i>Month</i>	<i>What to do</i>
October	Put on grease-bands to prevent winter moth caterpillars.
December	Spray with tar distillate wash, 5 per cent. Cleans tree. Kills aphid eggs. May not be necessary to do each year.
Early April	Spray with lime sulphur, $\frac{1}{4}$ pint to 10 pints water, to prevent scab and blister mite. Include little arsenate of lead in wash to kill caterpillars.
April	Spray with lime sulphur as above just before blossoms open. Include little lead arsenate paste again.
Mid-May	When all petals have fallen dust with copper-lime dust to prevent scab.
June	Dust again with copper-lime dust to prevent scab. Spray with lead arsenate, $\frac{1}{4}$ lb. lead arsenate paste to 6 gall. water, to kill slug worms and codlin caterpillars.
July	Spray with nicotine or liquid derris to kill slug worms, if necessary.

## Chapter VII

### PLUMS AND DAMSONS

PLUMS and damsons are perhaps the two most important fruiting members of the family known as *Prunus*. The other members of this family are the apricots, almonds, cherries and peaches, and of course there are the bullaces and sloes, which are usually found in woods.

#### SOIL

Plums prefer rich soil, for they love nitrogen. They do well, therefore, in an old vegetable garden on quite heavy soils and, contrary to popular opinion, on acid soils if these contain a fair proportion of sand. Like other fruits, they hate the extremes of the very heavy clay or the very light sand.

Flowering early as they do, the blossoms should have protection from the north and east winds. It is a mistake to plant on low land where frosty air is likely to collect. Wall trees are usually very successful in a garden, as ample protection can be given them.

#### BEST TYPES TO GROW

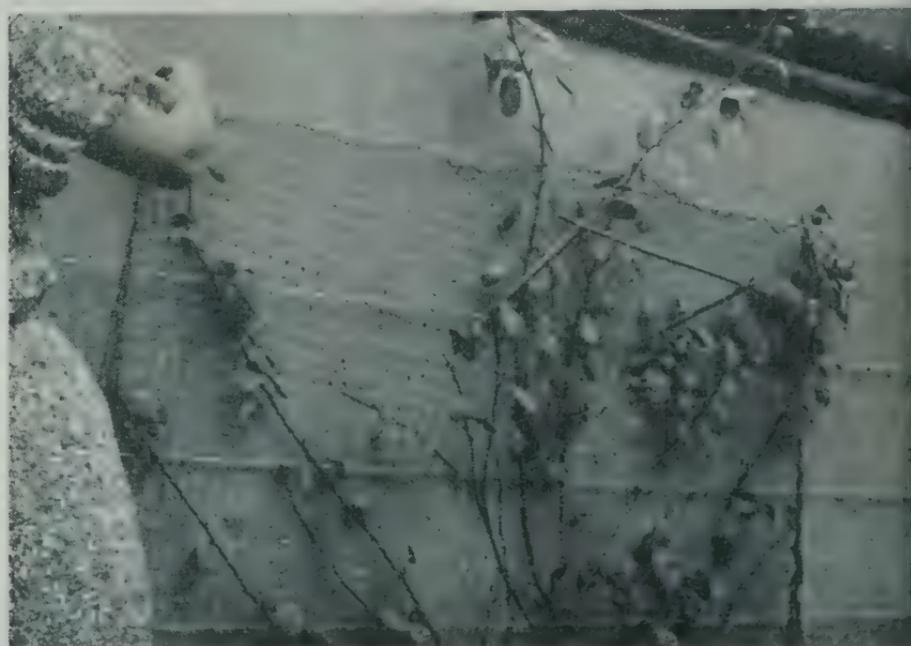
As has already been suggested, fan-trained trees are very suitable, and if planted on a warm south wall give excellent results. Give such trees, however, plenty of room for development so that they do not have to be pruned back.

## FRUIT GROWING AND PRESERVING

Plums may also be grown as bushes or as half-standards or standards. Damsons are usually grown as half-standards or standards only.

### CORRECT STOCKS

The Common Mussel stock can best be compared with



*Netting plums in order to give frost protection at blossoming time.*

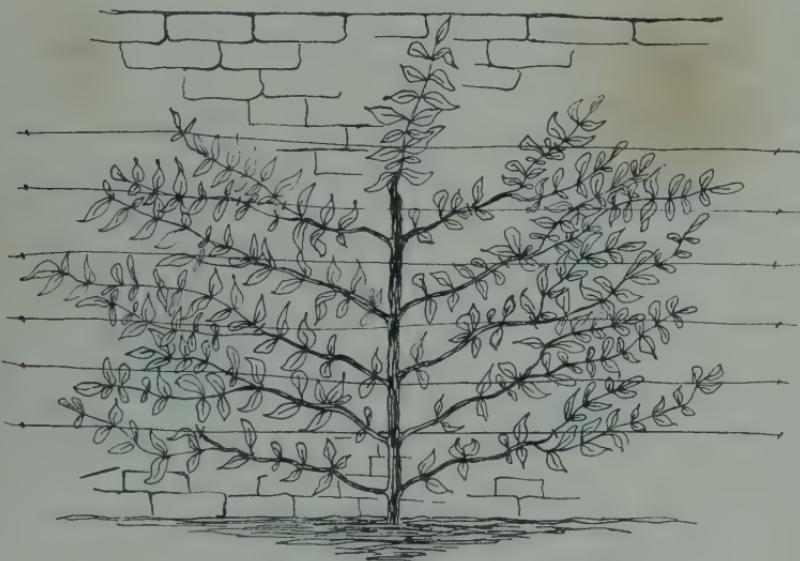
the No. 9 stock for apples. It should be used for bushes and fan-trained trees. Myrobalan B should be used for half-standards and standards. Certain varieties—viz., Czar—will not grow on the common plum, and Marianna should then be used. These stocks may be stipulated when ordering the trees.

## PLUMS AND DAMSONS

### PRUNING

Plums and damsons should not be pruned in the winter because of the danger of the entry of the silver leaf disease. Pruning may, however, be done in the summer during, say, the month of July or August, when there will be no fear of infection.

Young trees may be treated as advised for apples, and



*A plum tree trained  
fan shape.*

in the case of fan-trained wall trees the main work consists of pinching out the shoots in the summer that will not be needed in the winter for tying in. At this time some of the older wood may be cut out each season so that the young wood may be trained in its place.

Again may it be said, prune plums and damsons as little as possible.

## POLLINATION

If only one plum is to be planted a self-fertile variety should be chosen. Other than this, it is always necessary to ensure that efficient cross-pollination may take place.

The self-fertile varieties are: Denniston's Superb, Early Laxton, Early Transparent Gage, Gisborne's Prolific and Monarch. All these are early flowering.

The mid-season flowering self-fertile varieties are: Belgian Purple, Czar, Evesham Wonder, Giant Prune, Laxton's Gage, Laxton's Prosperity, Purple Egg, Reine Claude, Victoria and Yellow Egg.

The late-blooming self-fertile are: Belle de Louvain, Blaisdon Red and Oullin's Golden Gage.

All the other varieties may be said to be self-sterile and need to be cross-pollinated. Naturally they need a variety that flowers at the same time as they themselves so that the former can act as the 'husband.'

The early flowerers are: Bryanston Gage, Cambridge Gage, Coe's Golden Drop, Comte d'Althan's Gage, Jefferson's Gage, President, Utility and Warwickshire Drooper.

The mid-season flowerers that need pollinating are: Cox's Emperor, Golden Transparent Gage, Early Orleans, Kirke's Blue, Transparent Gage.

The only late-blooming self-sterile variety is Pond's Seedling.

## MANURES . . .

Try and give the plum trees plenty of organic matter each year. Use farmyard manure if possible, and if this is unobtainable, then apply composted vegetable refuse at 1 bucketful per square yard, or horticultural peat at the

## PLUMS AND DAMSONS

rate of  $\frac{1}{2}$  lb. to the square yard, as far as the branches spread. Use fish manure in addition at the rate of 3 oz. to the square yard. In the spring apply dried blood at the rate of 2 oz. to the square yard and fork this in lightly.

Should the soil be very sandy it may be necessary to apply sulphate of potash at 1 oz. to the square yard or wood ashes at 5 oz. to the square yard in the winter.



*Plum thinning on a fan-trained tree. Note the plums that have been thinned out in the author's hand.*

### SPACING OR THINNING

Never allow your plums or damsons to overcrop. Break-down weights of fruit often occur and the branches are ruined as a result. Prevent broken branches, disease, etc., by spacing the fruit out so that there is not more than one to every 2-in. length of shoot or branch.

## FRUIT GROWING AND PRESERVING

Not only will this improve the size of the fruit and prevent broken limbs, but it will also ensure more regular cropping. Trees often bear a tremendous crop one year and, because of this, nothing the next. Space and thin and you will get a greater chance of having a crop each season.

### PICKING

Pick dessert plums when they are properly ripe. Do not gather early. Don't pick if possible when the fruit is wet.

Pick cooking plums and damsons when they turn colour. It may be necessary to go over the trees and bushes several times for this purpose.

### VARIETIES

#### A GOOD GARDEN COLLECTION

<i>Dessert</i>	<i>Cookers</i>
Cambridge Gage—early September	Belle de Louvain—late August
Coe's Golden Drop—late September	Czar—early August
Jefferson's Gage—early September	Monarch—late September
Oullin's Golden Gage—mid-August	President—October
<i>Dessert or Cooking</i>	
Victoria—August	

#### GOOD WALL PLUMS

<i>North Walls</i>
Belle de Louvain
Denniston's Superb
Early Transparent
Rivers' Early Prolific
Victoria

<i>East Walls</i>
Coe's Golden Drop
Comte d'Althan's Gage
Early Transparent
Oullin's Golden Gage
Victoria

## PLUMS AND DAMSONS

### *South Walls*

Coe's Golden Drop  
 Denniston's Superb  
 Early Transparent  
 Golden Transparent  
 Kirke's Blue

### *West Walls*

Coe's Golden Drop  
 Denniston's Superb  
 Early Transparent  
 Oullin's Golden Gage  
 Victoria

### SPRAYING PROGRAMME

<i>Month</i>	<i>What to do</i>
October	Apply sticky grease-bands to prevent attacks of caterpillar.
December	Spray with 5 per cent. distillate wash to kill green-fly eggs.
Early April	Spray with lead arsenate, $\frac{1}{2}$ lb. per 12 gall. water, to kill caterpillars.
May	Spray with liquid derris to kill sawflies and red spiders.
Late May	Spray with lime sulphur, 1 pint to 100 pints water, to control red spider.
July	Saw off and cut out all dead wood to control silver leaf.

N.B.: It may not be necessary to carry out each one of these operations, but the tar oil emulsion should never be omitted, nor should the derris in May.

## Chapter VIII

### CHERRIES

IT is said that the first cherries arrived in Great Britain in A.D.100. Since then numerous varieties have been introduced from the Continent and new varieties have been raised in this country. Latterly some excellent kinds have been 'raised' by the John Innes Horticultural Institute.

#### SOIL

Cherries do not care for sandy soils, which dry out early, or very wet soils. They seem to prefer what are known as the brick-earths, which have good drainage.

They like a light rainfall, shelter from the east winds and protection from frost during blossoming time. When grown against walls they prefer those facing west and south.

#### BEST TYPES TO GROW

The cherry is at its best when it grows as a forest tree. It is, therefore, not a very suitable fruit for a small garden, especially as it is almost impossible to prevent birds from taking the fruits.

Grow the dessert varieties as fan-trained wall trees and then they can be protected with fish netting. The morellos can be grown as bush trees if desired, though they are excellent on a north wall which cannot easily be used for other fruits.

## CHERRIES

Cherries are sometimes grown as cordons, but then they do produce their own pruning problems.

## NANURES

Cherries need nitrogen each year, and therefore dried blood should be applied at the rate of 3 oz. to the square yard in February or March. In addition, once every three years bone meal should be given at 3 oz. to the square yard and sulphate of potash at 1 oz. per square yard. Wood ashes may be given at 7 oz. to the square yard instead of sulphate of potash, if necessary.

It is better not to give the nitrogen until the trees start carrying really heavy crops.

Wall trees should be mulched in June with farmyard manure, straw, leaves or some vegetable compost. This is important.

Every four years hydrated lime should be applied to the surface of the ground as far as the branches spread at 3 or 4 oz. to the square yard.

## WATERING

Trees growing against walls will need to be given a good flooding during droughty periods in June and July.

It is the rain which falls on to cherries in July that causes them to crack, and wall trees may be protected if desired by means of a temporary 'eave' being fixed above them.

## PICKING

Start gathering earliest varieties like Early Rivers about June 15, and continue picking until the late varieties are harvested by about August 20.

## FRUIT GROWING AND PRESERVING

Pick with the stalks on in the case of sweet varieties and in the case of the morello or sours, whose stems do not come away easily from the spurs, clip off with a pair of scissors.

Always pick when dry and be prepared to go over the trees several times, gathering the specimens which are ripe each time.

### CORRECT STOCKS

The best stock for sweet cherries as half-standards and standards is probably Gean, and for fan-trained and bush trees, the layered Mazzard.

In the case of sour cherries, the best stock for fan-trained and bush trees is Mahaleb, and for half-standards and standards, Gean.

There are two new dwarfing cherry stocks which are proving satisfactory, the Stockton Morello and the Kentish. Both of these may be much used in the future.

### POLLINATION

It can be said that all varieties of sweet cherry are self-sterile, and so pollinators, or mates as they are sometimes called, must be planted. Most kinds which flower at the same time will cross-pollinate each other, but there are some which insist on having a special mate.

#### EARLY FLOWERERS

Early Rivers  
Elton  
Emperor Francis  
Governor Wood  
Noir de Guben  
Turkey Heart

#### MID-SEASON FLOWERERS

Bigarreau de Mezel  
Bigarreau Schrecken  
Black Eagle  
Knight's Early Black  
Noir de Schmidt

#### LATE FLOWERERS

Bigarreau Napoleon  
Florence  
Frogmore  
Kentish Bigarreau  
Roundel  
Waterloo

## CHERRIES

### PICKING AND POLLINATION CHART

<i>Variety</i>	<i>Picking Season</i>	<i>Colour</i>	<i>Pollinator</i>
Black Eagle	Mid-July	Black	Bigarreau de Schrecken
Early Rivers	End June	Black	Governor Wood
Emperor Francis	Early August	White	Turkey Heart
Elton Heart	End June	White	Noir de Guben
Garreau de Mezel	End June	White	Black Eagle
Frogmore	End June	White	Roundel
May Duke	End June	Dark red	Napoleon
Napoleon	Early August	White	Waterloo
Noir de Guben	End June	Black	Early Rivers
Noir de Schmidt	End June	Black	Bigarreau de Mezel
Roundel	Mid-July	Black	Waterloo
Waterloo	Mid-July	Black	Roundel

### SOUR CHERRIES

<i>Variety</i>	<i>Flowering Season</i>	<i>Ripening Season</i>	<i>Use</i>
May Duke	Late	End June	Bottling, jam-making, cooking
Archduke	Late	Mid-July	Bottling, jam-making, cooking
Kentish Red	Late	Mid-July	Bottling, jam-making, cooking
Royal Duke	Late	Mid-July	Bottling, jam-making, cooking
Wensley Red	Late	End July	Bottling, jam-making, cooking
Morello	Late	End July	Bottling, jam-making, cooking

### CHERRIES FOR WALLS

#### *North*

Kentish Red  
May Duke  
Morello

#### *South*

Bigarreau Napoleon  
Bigarreau Schrecken  
Black Eagle  
Early Rivers  
Elton  
Florence  
Frogmore Bigarreau

#### *East*

Bigarreau Napoleon  
Bigarreau Schrecken  
Early Rivers  
Governor Wood  
Morello

#### *West*

Bigarreau Napoleon  
Bigarreau Schrecken  
Early Rivers  
Governor Wood  
Black Eagle

## FRUIT GROWING AND PRESERVING

### PRUNING

(a) *Sour.*—Prune so that fresh shoot growths will be encouraged every year.

With all trees cut out one or more whole branches in the early autumn or late spring. Train new growths in their place each season.

In the summer, cut out twigs that die as the result of attacks by the brown rot fungus.

(b) *Sweet.*—When young cut back the leaders or encourage one-year growths by about half and continue to do this for the first, say, five years. After this reduce pruning to an absolute minimum.

So as to prevent attacks by silver leaf prune either in August or in April. Aim at cutting out crossing or rubbing branches, dead wood, diseased wood, etc., as advised in the case of plums.

In the case of wall-trained trees, pinch out the side growths with the thumb and forefinger to within five or six leaves of their base, and in September shorten these back to within three buds with a pair of Rolcut sécateurs.

Leading shoots that get to the top of the wall should be bent over and tied down instead of being cut back each year.

### SPRAYING PROGRAMME

Month	What to do
October	Apply grease-bands round the trunks of the trees to prevent attacks of caterpillar next year.
December	Spray with a 10 per cent. solution of tar distillate wash to kill aphid eggs and prevent attacks of black fly next year.

## CHERRIES

<i>Month</i>	<i>What to do</i>
April	Spray with lead arsenate, dissolving 1 lb. of paste in 25 gall. of water. (Don't spray during blossoming.) This will kill caterpillars.
Just before the blossoms open	Spray with Bordeaux mixture.
Just after the blossoms have fallen	Spray with Bordeaux mixture, half-strength.
Just before the leaves fall in the autumn	Spray with Bordeaux mixture.

N.B.: These last three sprayings are to control bacterial canker, which causes little shot holes in the leaves and flattened canker-like dying back on the main stem.

## Chapter IX

### THE CANE FRUITS

*Raspberries, Loganberries, Blackberries, etc.*

#### Raspberries

As the raspberry is a native of this country, there is therefore no difficulty in growing it in almost any garden. It is important, however, to grow the right varieties and not allow them to seed themselves. When fruits are allowed to drop to the ground useless seedlings often result which may be very strong and prolific and by their strength of growth they may soon smother out the original variety.

#### SOIL

Raspberries like a deep, rich, well-drained soil. Before planting, therefore, the strip of land in which they are to be grown should be dug to a depth of 2 ft. and farm-yard manure or well-rotted vegetable refuse incorporated at the rate of 1 good barrowload to 10 square yards. In addition, fork into the top 3 or 4 in. a good fish manure at 3 oz. to the square yard, together with sulphate of potash at 2 oz. to the square yard. When sulphate of potash is not available, wood ashes should be used instead at  $\frac{1}{2}$  lb. to the square yard.

## THE CANE FRUITS

### HEALTHY STOCKS

Because mosaic and other virus diseases have infected a very large percentage of the raspberry canes in Great Britain it is most important to plant only healthy virus-free canes. The Horticultural Educational and Advisory Bureau, Thaxted, Essex, will be able to give information as to reliable sources of supply.

It is important not to plant these virus-free canes in a garden containing diseased raspberries already, for then the new stock will soon become infected. If the new row or rows can be kept free from mosaic the canes should be in profitable bearing for at least ten years.

### PRUNING

In October all the old canes which have borne fruit should be cut down to ground level, and be *burnt*. At the same time, young, weak-looking shoots should be removed. In fact only the six strongest canes to each plant should be left to produce the fruit next year.

In March the tips should be cut back, as this encourages the formation of laterals lower down, on which the fruits are borne.

Autumn-fruiting kinds should be pruned in February, the canes being cut down to within 4 in. of the ground level.

### SUMMER PRUNING

All suckers that are growing up in between the rows should be removed. All young weak shoots in the rows may be removed at the same time with the object of leaving only the six strongest canes to each plant.

## FRUIT GROWING AND PRESERVING

### MANURING

Raspberries *love organic matter*. Farmyard manure or some similar substitute, such as rotted vegetable refuse, horticultural peat and the like, should be applied along the rows early in May to act as a *mulch*. (This is most important.) Sulphate of potash should be applied in November at 2 oz. to the square yard and bone meal at 3 oz. to the square yard. Wood ashes at  $\frac{1}{2}$  lb. to the square yard may be substituted for sulphate of potash.

### PLANTING

Plant in November or early December in rows 5-6 ft. apart with the canes 2 ft. apart in the rows. See that the roots are only 1 in. below the surface of the ground, but make the soil firm. Cut down the canes to within 9 in. of soil level in March. It is the new canes which will grow out from the roots that will bear the following year.

### GIVING SUPPORT

Drive a post in at either end of the raspberry rows, stretching wires from these at 5 ft.,  $3\frac{1}{2}$  ft. and 2 ft. above ground level. Tie the canes to these wires, preferably in the summer a few weeks before fruiting.

A simpler method is to nail a cross-piece of wood to the posts, thus forming a 'T,' stretching a wire at either end of the T-piece to the other end of the row, nailing it firmly to the opposite T-piece in question. These parallel wires—there may be more than two pairs—will keep the canes from falling over and provide the necessary support without the need of any actual tying.

## THE CANE FRUITS

### CULTIVATION

Keep the rows hoed regularly, but not deeply, for raspberries are surface-rooted.

In addition to the heavy dressing of dung already advised, *mulchings* of lawn mowings may be given throughout the summer to help to keep the moisture in the soil.

Some gardeners cover the ground each December with straw 9 in. to 1 ft. deep and so have to do no hoeing at all.

### PICKING

Pick the fruit when dry, as it ripens. Leave the plug on the plant.

### VARIETIES

(Name, Description, Picking time)

#### *Summer Fruitors*

Lloyd George. Conical, large, prolific, vigorous. July.

Norfolk Giant. Round, large, heavy cropper. August.

Malling Promise. Very heavy cropper, large berries.

July.

Malling Enterprise. Most delicious. Makes good canes.

July.

Malling Jewel. Perhaps the heaviest cropping variety.

July.

Pyne's Imperial. Vigorous, tall canes, very heavy cropper, fruit conical, firm, solid. Excellent flavour.

Late July.

#### *Autumn Fruitors*

Hailsham Berry. Round, large, vigorous, good flavour.

October-November.

## FRUIT GROWING AND PRESERVING

October Red. Large, round to conical, prolific, slightly acid. November.

Queen Alexandra. Large dark red, excellent flavour, very sweet. October-November.

November Abundance. Fruit borne in large clusters. Large deep red, canes strong and vigorous. October-November.

### *Yellow Fruitters*

Bryne's Apricot. Large, juicy, good flavour, strong grower, heavy cropper. July.

Lord Lambourne. Large, juicy, sweet. October-November.

October Yellow. Similar to October Red.

Trinder's Golden Hornet. Large fruits, strong canes, medium to heavy cropper, good flavour. October-November.

## SPRAYING PROGRAMME

<i>Month</i>	<i>What to do</i>
December	Spray canes with 5 per cent. solution of tar distillate wash to smother aphid eggs.
Mid-March	Spray canes with lime sulphur, using 7 per cent. solution, in order to cure the cane spot disease.
Late June and Early July	Spray canes at blossoming time with liquid derris in order to kill raspberry beetles and so prevent maggoty fruit. Two sprayings may be necessary at ten-day intervals.

### **Loganberries**

It is said that the loganberry was raised by Judge Logan of California as a result of crossing the raspberry with

## THE CANE FRUITS

the blackberry. It grows like the blackberry, and is often used in gardens trained over a trellis, or against a wall or fence. It makes an excellent screen. The fruit is especially useful for bottling and for cooking, though it can be eaten raw. Fortunately the flowers are self-fertile.

### SOIL

Any deep, well-drained soil will do, provided that the situation has some protection against the coldest winds.

### HEALTHY STOCKS

It is most important to purchase the true loganberry. Some nurseries today seem to have got their stocks muddled with the Phenomenal Berry. There is a good deal of virus disease about also, so be very careful where you place your order.

### PRUNING

Immediately the fruit has been picked the canes that have borne the crop should be cut to the ground.

### MANURING

Loganberries should be manured in a similar manner to raspberries, except that in addition to the dung and artificials advised, dried blood should be applied in February or early March at the rate of 2 oz. to the square yard, and steamed bone flour at the rate of 2 oz. to the square yard early in April.

### PLANTING

Young plants, which are really the tips of shoots made the previous year 'struck' by burying a portion below

## FRUIT GROWING AND PRESERVING

ground level, should be planted either in the spring or in the autumn, 10 ft. apart. If there is to be more than one row, 6 ft. should be given from the one to the other. No fruit will be borne the first year, but strong canes will be produced that season which will crop the following year.

### GIVING SUPPORT

The canes should be tied to horizontal wires stretched 3 ft. and 5 ft. above the level of the ground, in fan-shaped formation. The canes should be spaced like the ribs of a fan, as evenly as possible, any part of the cane which extends beyond 5 ft. being cut back.

In order to prevent disease spores dropping from the old canes on to the new canes, it is necessary to train the young shoots as they grow up through the middle of the fan, tying them to a special wire provided for them, 6 ft. above ground level—*i.e.*, 12 in. above the top wire.

When the fruiting canes have been removed the young canes will then be spread out fanwise, taking the place of the old ones.

### CULTIVATION

Cultivate in between the rows and in between the plants during the spring and summer as advised for raspberries. Be prepared to give mulchings of lawn mowings, horticultural peat or similar material during the summer.

### PICKING

Picking should commence about the middle of July and continue into August. Pick each fruit when perfectly dry as it ripens with the plug in the fruit, but leaving the strig or stalk on the plant.

## THE CANE FRUITS

### SPRAYING PROGRAMME

Month	What to do
December	Spray with a 5 per cent. solution of a tar distillate wash to kill aphid eggs.
May	Spray with Bordeaux mixture in order to control the cane spot disease.
Late June	Spray with liquid derris in order to kill the beetles which cause the maggoty fruit. Spray again ten days later.
Early July	Spray with colloidal copper (Bouisol) in order to get complete control of cane spot.

### Phenomenal Berry

Very similar to the loganberry. The fruits are larger and ripen later. They may be grown in exactly the same way as the loganberry.

### Blackberries

Everyone knows that the blackberry grows wild in this country, but it isn't everyone who realises what very large crops the cultivated blackberry can yield.

### SOIL

Any garden soil will do, provided it is moist and yet well drained and the position is a sunny one.

### PRUNING

Exactly as advised for loganberries, except that it is possible to retain, if desired, one or two of the old canes for a second year, pruning the side shoots back to within an inch or so of their base.

## FRUIT GROWING AND PRESERVING

### MANURING

The blackberry, perhaps, requires even more generous manuring than the raspberry or loganberry. In addition, therefore, to the farmyard manure or well-rotted vegetable refuse used, apply a good poultry manure, fish manure, or meat and bone meal, at 4 or 5 oz. per square yard. Give also steamed bone flour at 3 oz. to the square yard in April.

### PLANTING

The canes will need to be planted at least 12 ft. apart, and if there is more than one row the next should be 6 ft. apart. The plants will usually continue to crop successfully for fifteen years.

Plant in November or early December, firmly but not deeply.

### GIVING SUPPORT

Stretch wires from posts 5 ft., 3 ft. and 2 ft. above soil level. Tie the young canes in as they grow during the summer to the bottom wire, and each autumn untie them, and tie them up to the 5 ft. and 3 ft. wires when the canes that have fruited have been removed.

It doesn't matter if more than one cane is tied to the wires, alongside one another, and in fact you can have, as it were, ropes of canes tied together in this way.

### CULTIVATION

As advised for loganberries.

### PICKING

As advised for loganberries.

## THE CANE FRUITS

### VARIETIES

(Name, Description, Habit, Picking time)

Bedford Giant. Large berries, deep black, firm, excellent flavour, sweet. Strong, heavy cropper. Late July.

Parsley-leaved. Black, firm, large, round fruits, excellent flavour. Medium grower, good cropper. Mid-August.

Himalaya Berry. Shiny black, firm, very large, good flavour. Fruit on old and new wood. Very strong. Very heavy cropper. Mid-August.

John Innes. Large, sweet, not seedy, shiny black, firm. Very heavy cropper, strong cane. Late August.

### SPRAYING PROGRAMME

<i>Month</i>	<i>What to do</i>
December	Spray with 5 per cent. distillate wash to smother aphid eggs.
Early July	Spray with liquid derris. Thorough soaking. To kill beetles and prevent maggoty fruit.
Mid-July	Ditto.

### Boysenberry

This should be grown in a similar manner to the blackberry. It is said to be a cross between the blackberry and the loganberry. It is a heavy cropper, producing very large fruits that are excellent for bottling or jam-making.

### King's Acre Berry

Similar to the blackberry. Can usually be picked at the end of June or early in July. The fruits are large,

## FRUIT GROWING AND PRESERVING

long and black and have somewhat of the blackberry flavour.

### **Young Berry**

Produces exceptionally large fruits of first-class flavour. Does not grow so strong as either the loganberry or blackberry and therefore is very promising for the smaller garden. Well worth trying.

### **Veitch Berry**

Produced as a result of crossing the Abundance raspberry with a blackberry. Should be grown as advised for blackberries. Produces juicy, sweet, largish berries, similar in colour to mulberries, but twice as large. Usually ready to pick just after the raspberries and just before the blackberries.

### **Laxton Berry**

A cross between the loganberry and the raspberry. Bears raspberry-like fruits, bright red in colour. Is self-sterile and needs the pollen of other fruits flowering at the same time.

### **Nectar Berry**

Produces the largest berry I know. Quite good as dessert and delicious when made into jam. Grows rather like the loganberry.

## Chapter X

### RED AND BLACK CURRENTS

THE name currant is said to come from Corinth, the Greek city which was responsible for the large output of dried currants used in cakes and pastries. The grocers' currant, however, is really a small dried grape, whereas the fruit growers' currant is a member of the Ribes family which is indigenous to this country.

#### Black Currants

##### OIL

The bushes grow best in a soil which contains plenty of humus. Heavy soils are quite suitable, providing they are well drained.

It is perhaps more important to choose the position which is sheltered from the north and east winds at blossoming time, for it is at this time when the flowers may easily be killed, and if insects are not allowed to work freely, transferring the pollen from bloom to bloom, then little fruit may result. Shelter, therefore, is quite important.

Some gardeners like planting black currants quite close in the rows so as to enable the pollinating insects to work from bush to bush without coming into the open at all.



*Big Bud on black currant. Note how late the affected buds are in moving, as compared with the others.*

## RED AND BLACK CURRENTS

### HEALTHY STOCKS

It is most important to obtain bushes which are guaranteed free from reversion and big bud mite, and therefore it is advisable to obtain those which have been certified by the Ministry of Agriculture.

Such bushes should last about ten years if well looked after and if kept free from pests and diseases.

### PRUNING

As the fruit buds of the black currant are formed along the whole length of the young wood, it is necessary to ensure that there is plenty of new wood each season.

For this reason black currant bushes should not be grown on a leg. Each November a certain number of the branches that have borne fruit should be cut down almost to ground level so as to encourage strong new shoots. The general plan will be to cut away one-third of the branches in each bush each season.

### SUMMER PRUNING

No summer pruning should be done.

### MANURING

Black currants need to be heavily manured, any form of organic matter being suitable. Use, therefore, farm-yard manure, composted vegetable refuse, or wool shoddy, at the rate of one good barrowload to 10 square yards each winter, dug in shallowly around the bushes and in between the rows. In addition apply steamed bone flour once every three years in April at 3 oz. to the square yard, and sulphate of potash at 1 oz. to the square yard.

## FRUIT GROWING AND PRESERVING

If this is unobtainable use 5 oz. of wood ashes per square yard instead.

In March apply nitro-chalk, nitrate of soda or sulphate of ammonia at 2 oz. to the square yard all around and among the bushes.

### PLANTING

Plant in November or early December in rows 5 ft.



*Planting a black currant. Note the way the roots are being spread out on a little mound in the bottom of the hole.*

apart, allowing the bushes to be as close as 4 ft. apart in the rows. In this way they may almost form a hedge, and this allows insects to travel from bush to bush easily in the spring at blossoming time, without having to come out into the 'open' at all.

## RED AND BLACK Currants

### CULTIVATION

Hoe regularly in between the rows during the spring and summer, giving the bushes a good mulching with lawn mowings or similar material in June if possible.

In the winter dig over the land in between the rows fairly shallowly, burying any manure that may be necessary at the same time.

### PICKING

Pick the fruit as it ripens. It usually starts to turn black several days before it is really ready to pick. Go over the bush two days later, and a few days after that strip finally.

### VARIETIES

#### (Name, Season, Description, 'Tips')

Seabrook's Black. Mid. Vigorous grower, compact, fruit medium, skin tough. Very large fruit produced on young bushes.

Boskoop Giant. Early. Large fruits, sweet, tender skin, very vigorous grower. Branches apt to droop. Fruit apt not to set properly.

Baldwin. Late. Weak grower but compact, fruit medium. Tough skin. Usually heaviest cropper over long period.

Daniel's September. Very late. Fruit acid, medium size, very tough skin, medium grower. Not really September, but late August.

'Wellington Triple X. Early. Large sweet berries, moderately tough skin, grows vigorously. Excellent variety; fault is that it is apt to spread.

Westwick Triumph. Late. Large, moderately tough

## FRUIT GROWING AND PRESERVING

berries. Long trusses. Worth while growing because late.

\*Mendip Cross. An early variety. Very heavy cropper.

\*Cotswold Cross. A mid-

season variety.

\*Malvern Cross. A late variety.

Raised by the Long Ashton

Research Station.

\* These varieties are specially recommended.

### SPRAYING PROGRAMME

<i>Month</i>	<i>What to do</i>
December	Spray tar distillate wash, using 5 per cent. solution. Will kill green-fly eggs and winter moth eggs.
Early March	Spray with D.N.C. using $7\frac{1}{2}$ per cent. solution. Will kill capsid bug eggs and any caterpillar eggs remaining.
April	Spray just before blossom opens with lime sulphur, 1 pint to 20 pints of water, in order to kill and prevent attacks of big bud mite. Spray liquid derris to kill caterpillars, if any.
July	Go over the bushes to look for reversion. Dig out reverted bushes and burn them (see appendix).
September	Spray with Bordeaux mixture after the crop has been gathered to prevent and kill attacks of rust and leaf spot.

### Red Currants

#### SOIL

The red currant will grow in almost any garden soil, but it insists on plenty of sunshine and likes shelter from strong winds.

## RED AND BLACK CURRENTS

### BEST TYPES TO GROW

Obtain bushes on a leg or short stem, with branches shaped like a goblet or vase. It is also possible to get half-standards and cordons which crop all the way up the stems.

### PRUNING

The red currant bears its fruit at the base of the lateral growths made the previous year. Therefore shorten all the



*Red currant brutting (breaking) to prevent the shoot growing again.*

laterals or side shoots back to within two buds and the leading growths or end shoots back to one-half just above a healthy bud, in the direction in which it is hoped the new shoot will grow.

## FRUIT GROWING AND PRESERVING

### SUMMER PRUNING

Pinch back or break off with knife blade all side shoots to within four or five leaves of their base in the summer just when the fruit is starting to colour (see figure, page 89). Do not prune back leaders or 'end growths' at this time.



*Mulching the trees with grass—an excellent method of supplying humus to the ground.*

### MANURING

Give similar manuring as advised for raspberries. Red currants need more potash than black currants, so apply sulphate of potash at 2 oz. to the square yard each year.

### PLANTING

Plant the bushes firmly but shallowly, 5 ft. square.

## RED AND BLACK CURRENTS

The cordons may be planted 2 ft. apart in the rows and the half-standards 6 ft. apart.

### CULTIVATION

As advised for black currants, but special care must be taken not to fork or dig too deeply around the bushes so as to prevent the roots being injured. With red currants, 'suckers' are not to be encouraged—in fact, if these are seen they must be cut down to below soil level.

### PICKING

Pick the fruits in their trusses the moment they are bright red in colour. Some varieties, of course, turn a darker red than others.

### VARIETIES

(Name, Season, Description, 'Tips')

Fay's Prolific. Early to mid. Large, deep red fruits ripen evenly. Wood apt to be brittle. Needs wind protection. Perhaps the most popular commercial variety.

Earliest of Four Lands. Early. Fruit palish, vigorous grower, upright.

Laxton's No. 1. Mid-season. Large, shining, scarlet fruits, good grower. Perhaps the best new kind.

Wilson's Longbunch. Very late. Long trusses of pale red fruits. Medium to strong grower. Does well all over England.

Raby Castle. Late. Bright red fruits of medium size, crops well. An excellent cordon variety.

Rivers' Late Red. Very late. Palish fruit, medium size, long truss. Prolongs the season. Sometimes called Prince Albert or Murie Red.

## FRUIT GROWING AND PRESERVING

## SPRAYING PROGRAMME

<i>Month</i>	<i>What to do</i>
December	Spray 5 per cent. tar distillate wash. Kills green-fly eggs.
April	Spray liquid derris to control saw-fly caterpillars.
July	Spray with Bordeaux mixture or Bouisol immediately after crop has been gathered to control and prevent leaf spot and rust.

**White Currants**

These should be grown in an exactly similar manner as advised for red currants.

Good varieties are:

White Versailles, early, sweet, large, transparent, long truss, very large berries.

Wentworth Leviathan, very large berries, a strong grower, but very late.

## Chapter XI

### GOOSEBERRIES

THE gooseberry was probably introduced into this country during the sixteenth century. Anyway, it is a native of Europe and succeeds all over Great Britain. It does particularly well in the north, and, in fact, in Cheshire and Lancashire there are special Giant Gooseberry Societies.

#### SOIL

Gooseberries cannot grow in waterlogged soils or in sandy land lacking in potash. Other than this they will grow in almost any garden, and have been known to remain producing heavy crops for fifteen years. The bushes do, however, need care and attention.

#### BEST TYPES TO GROW

Gooseberries can be grown as standards and as single, double or triple cordons. They have been trained as espaliers and as grid-irons.

Normally, however, in the garden, they should be planted as bushes on short legs as advised for red currants.

#### PRUNING

There are two main systems of pruning—(1) the spur system and (2) the thinned system. The former should be carried out by those who desire large dessert berries, and the latter by those who prefer quantity.



Thinning out Careless gooseberry bushes - this ensures that the berries which remain grow larger.



*Pruning a young gooseberry with the idea of producing good branches for the future.*

## FRUIT GROWING AND PRESERVING

(1) *Spur Pruning*.—The number of branches should be restricted to about eight or nine. Each early spring the side growths or laterals should be cut back with the sharp blade of a knife to within 2 in. of their base. The end growth of each branch, or leader as it is called, should then be cut back by half to just above an outward-pointing bud.

This spurring system should be carried out in the case of all artificial types of trees, cordons, espaliers and grid-irons, and in the case of bushes of dessert varieties where it is the aim to produce large berries.

(2) *The Thinned System*.—As the fruit is borne on both one-year-old and two-year-old wood there is no need to spur. The bush can be allowed to grow almost at will, but every winter or early spring a certain number of old branches should be cut out whole in order to keep the bush open and to make for ease of picking in the summer.

Crossing and rubbing branches should be removed, branches that tend to droop on the ground should be cut back to an upward-growing growth, while any suckers coming up from the roots should be cut off below ground level.

It is important to keep the branches well away from the soil, because mildew spores always blow up from the ground.

### SUMMER PRUNING

Where the spur system is adopted, and especially in the case of the artificial forms of trees, the side growths may be cut back to within 5 in. of their base in June and July.

### SPECIAL NOTE

Unfortunately sparrows and finches eat out the buds of

## GOOSEBERRIES



*Pruning gooseberries—before  
and after.*

## FRUIT GROWING AND PRESERVING

gooseberries during the winter. It is better, therefore, to delay pruning as late in the winter as possible and to string black cotton from branch to branch in November which helps to scare the birds away. Whitening the bushes with plenty of lime and salt is also a deterrent.

### MANURING

Potash is undoubtedly the most important plant food. Every year sulphate of potash should be applied at  $1\frac{1}{2}$  oz. to the square yard in November. It should be sprinkled all over the ground where the gooseberries are growing. Where sulphate of potash is unobtainable wood ash should be used at  $\frac{1}{2}$  lb. to the square yard instead.

In addition give well-rotted farmyard manure, or properly composted vegetable refuse at the rate of one heavy barrowload to 12 square yards. Apply this as a top dressing all round the bushes as far as the branches spread in May. In addition, lawn mowings may be given as a top dressing also in July—to a depth of an inch.

Some gardeners use horticultural peat at a bucketful to the square yard as a top dressing. This makes an excellent mulch.

Do not give gooseberries poultry manure, nitrate of soda, sulphate of ammonia or nitro-chalk. These tend to encourage too much soft wood growth with consequent attacks by mildew.

### PLANTING

See that the gooseberry bushes are on a good leg or stem, and plant them 5 ft. square.

Make a hole about 8 in. deep, sufficiently large to take the roots. Spread the roots out evenly and plant firmly. Do not plant any deeper than the soil mark found on the stem.

## GOOSEBERRIES

### CULTIVATION

Dig the ground over very shallowly in December so as not to disturb the roots. Just bury the weeds, if necessary. When heavy mulchings of peat are used there are few weeds as a result.

In the spring hoe in between the bushes, and keep on hoeing throughout the summer to keep the land clean, unless the peat mulching method is adopted.

### PICKING

The first 'pick' can be made directly the green berries are large enough to use in pies. The little fruits should be thinned out at this time so that the remaining berries have a chance of growing to a good size. Pick, say, every other one.

Aim to gather the fruit from the centre of the bush first and then the largest fruit from the lower branches.

When growing large dessert kinds such as Leveller, it is necessary to thin out the berries when they are  $\frac{3}{4}$  in. long to 2 in. apart.

Dessert gooseberries should be picked when ripe and before they split.

### VARIETIES

(Name, Season, Colour, Description)

Careless. Mid-July. White. Oval, very large, heavy cropper, large bush, one of the best to grow.

Cousen's Seedling. Early August. Yellow. Large oval, slightly hairy, delicious, spreading growth, sulphur-shy.

Crown Bob. Mid to end July. Red. Large, oval, slightly hairy, thin-skinned, good flavour. Good green and red.

## FRUIT GROWING AND PRESERVING

- Howard's Lancer. Mid to end July. Green. Medium to large, oval, greenish-white, excellent flavour, regular cropper, large spreading bush, suckers badly, susceptible to mildew.
- Keepsake. End June. Red. Large, oval, hairy, excellent flavour, excellent for picking, early, heavy cropper, susceptible to mildew.
- Leveller. Mid to end July. Yellow. Very large, oval, smooth skin, heavy cropper, excellent flavour, give heavy manuring, susceptible to lime sulphur.
- Lord Derby. Early August. Red. Extraordinarily large, smooth skin, good for mince pies.
- May Duke. Early July. Red. Medium, roundish, smooth skin, excellent cooker, may be picked green in May. Upright grower.
- Warrington. Early August. Red. Medium size, roundish, good flavour, good for jam, strong spreading grower.
- Whinham's Industry. Mid-July. Red. Medium, oval, hairy skin, sweet flavour, excellent for jam, susceptible to mildew.
- White Lion. End July. White. Large, oval, downy, heavy cropper, makes large bush.
- Whitesmith. Mid-July. White. Medium, oval, smooth, hardy, good cropper.

### *Best Varieties for Standards*

*Green*—Keepsake. *Red*—Lancashire Lad, Lord Derby, Whinham's Industry. *Yellow*—Leveller, Leader. *White*—Careless, Whitesmith.

### *Best Flavoured Berries for Desserts*

*Red*—Champagne. *Yellow*—Langley Gage. *Red*—Warrington.

## GOOSEBERRIES

### Best Bottling Varieties

*Green*—Keepsake, Howard's Lancer. *White* or *Green*—Careless. *Red*—Whinham's Industry. *White*—Whitesmith.

### Varieties for Exhibition

*Red*—London. *Green*—Shiner. *Yellow*—Ringer, Thatcher. *White*—Princess Royal, Snowdrop.

### Varieties with Drooping Growth

Careless\*, Howard's Lancer\*, Whinham's Industry\*, White Lion\*.

N.B.: Grow these varieties\* on a good leg and keep leaders pruned to upward-growing bud.

### SPRAYING PROGRAMME

Month	What to do
December	Spray tar distillate wash, 5 per cent., to kill green-fly (aphid) eggs.
Beginning of March	Spray D.N.C. emulsion, $7\frac{1}{2}$ per cent. solution, to kill capsid bug eggs, winter moth and red spider eggs.
April	Spray lime sulphur, $2\frac{1}{2}$ per cent. solution, just before flowering, to prevent mildew and red spider. † Spray lime sulphur, using 1 per cent. solution, immediately after flowering. Prevents mildew and red spider.
	Spray liquid derris to kill saw-fly caterpillars and other caterpillars as well.

\* N.B.: Varieties that are lime-sulphur shy should be sprayed with a washing soda solution instead of lime sulphur. Formula:  $1\frac{1}{2}$  lb. washing soda, 1 lb. soft soap to 10 gall. water.

† Special Note: Liquid derris should be used directly the caterpillars are seen, and may, if necessary, be mixed with the lime sulphur.

## Chapter XII

### STRAWBERRIES

THERE are plenty of wild strawberries in the woods which have grown in Great Britain presumably since the dark ages. The cultivated varieties are said to have been introduced from America and Chile. The present-day varieties have been produced by nurserymen who have done the necessary crossing.

#### VITAMIN C

Strawberries are rich in vitamin C, as indeed are black currants. When there are plenty about children receive their vitamin C through eating oranges and lemons and grown-ups through grapefruit and tomatoes.

Strawberries do not lose their vitamin C content when made into jam, and therefore there will be many who will want to grow this fruit to conserve it for the winter, as advised in the chapter dealing with jams and jellies.

#### SOIL

The strawberry will grow in any garden soil, but loves to have land which is rich in humus. In days gone by market gardeners always planted strawberries on reclaimed woodland sites.

A sunny position should be chosen and one which can easily be protected from frost during blossoming time.

#### PLANTS

It is most important to purchase healthy, vigorous

## STRAWBERRIES

lants, guaranteed free from virus. It is better to start from one plant known to be free from virus than to put in two dozen or more which are even only slightly affected. The writer will be happy to give advice as to where healthy stocks can be obtained.

Strawberries send out runners in July on which plants grow. These soon throw out roots into the ground, especially if they are pushed down into the soil and held in place with a piece of wire bent like a hairpin. When the plants have rooted they may be detached from their parents and put out immediately into their new position. The earlier the plants can be set out in rows the better. It pays to plant in August every time—and if this is impossible, in September. Latterly we have had the best results from planting in July.

### POLLINATION

Some varieties of strawberries are self-sterile, or partially so, and need the pollen of another variety planted close by if they are to prove satisfactory and crop well.

Three varieties that need pollination are Tardive de Leopold, Huxley Giant and Oberschlesien.

Royal Sovereign is an excellent pollinator of all these varieties, but is apt to catch the virus from Huxley, which is a 'carrier,' yet not showing the symptoms.

Varieties which do well together are Tardive de Leopold and Huxley Giant.

### MANURING

Having dug the ground over a spade's depth and buried well-rotted farmyard manure or properly composted vegetable refuse, 8 in. down, at the rate of 1 good barrowload to 12 sq. yds., fork finely divided organic

## FRUIT GROWING AND PRESERVING

matter such as horticultural peat at 1 bucketful to the square yard into the top 3 or 4 in. Use instead, if desired, finely divided leaf mould.

Each November apply sulphate of potash at  $1\frac{1}{2}$  oz. to the square yard and steamed bone flour at 3 oz. to the square yard. Each April apply a good fish manure at 4 oz. per yard run along the rows, hoeing this in lightly.



*Strawberry planting with  
a trowel.*

### PLANTING

Get the planting done as early as possible. As I have said, it is better to plant in July than in August, and it is better to plant in August than September. After September it is better to delay planting till April.

## STRAWBERRIES

Plants struck in 3-in. pots filled with a John Innes potting compost give the best results, for there is no disturbance of roots when moving them.

Allow 2 ft. between the rows and 18 in. between the plants in the rows. Make the holes with a trowel. See that the roots are spread out properly, and see also that they are allowed to go down to their full length. Plant so that the crowns are not buried and yet so that there is no part of the root at all above soil level.

Go over the rows a fortnight after planting and firm those that are loose, or that are tending to come out of the ground.

Do not plant healthy virus-free runners in a garden where there are old, diseased plants growing already. Grub and burn the old plants first of all.

It is better not to keep a bed down more than three years these days, because of virus troubles, and at the end of the picking season, therefore, the three-year-old beds should be utterly destroyed.

## CULTIVATION

Always hoe up to the plants rather than away from them, for the strawberry tends to make new roots up its crown each year. Don't hoe too deeply, for the strawberry is very surface-rooting.

If there is any danger of the flowers being frozen in the spring, cover the rows with continuous cloches. These are not expensive and they give excellent results. Not only do they prevent frost, but if kept in position over the rows they will bring the fruits into use some three weeks before the normal time. (For further information *re* the use of cloches, see *The A.B.C. of Continuous Cloche Gardening*, published by the English Universities Press, price 5s.)

## FRUIT GROWING AND PRESERVING

Straw or horticultural peat should be put along the rows just after blossoming time, the forming fruits being put on the straw or peat in order to keep them clean and free from soil. Wheat or oat straw is best for the purpose, though always weedy—that's why the author prefers peat!

After picking, the runners should be cut off the parent plants, and the straw should be raked off and used on the compost heap to rot down as manure. The horticultural peat is not removed at all—it is forked in, if necessary, later and adds organic matter to the ground.

### PICKING

Pick the berries as they ripen. The best are usually used for dessert and the smaller ones for jam making. It is best to pick when the fruit is dry.

### WARM WATER TREATMENT

In order to ensure that plants are free from all pests, at planting time, it is well worth while giving them what is called the warm water treatment. They should be immersed in water at a temperature of exactly 110° F. for twenty minutes. It is better to have a slatted wooden false bottom to the container so as to prevent the plants from burning.

Immediately the strawberries are taken out of their warm bath they should be cooled off *quickly* by placing them under cold running water.

If you have virus-free plants and if you keep them free from aphides by regular spraying with nicotine you should be able to produce excellent runners in soil rich in humus. In this case the warm water treatment will not be necessary.

## STRAWBERRIES

### VARIETIES

(Name, Season, Colour, Remarks)

- Huxley Giant. Mid. Red. Large fruit, somewhat coarse, heavy cropper, strong grower.
- Madame Lefebvre. Mid. Scarlet. Medium flavour, fair-sized berries, good for jam.
- Royal Sovereign. (Malling 40 strain.) Early. Scarlet. Fairly large berry, excellent flavour, perhaps the best. Fair grower. Must be kept virus-free.
- Sir Joseph Paxton. Late. Dark Red. Well flavoured, hardy, large berries, prefers heavy soil.
- Auchencruive Climax. Good cropper. Large berries, immune from the red core disease, excellent in Scotland.
- Western Queen. Mid. Scarlet. Good grower, heavy cropper, well flavoured.

### SPRAYING PROGRAMME

<i>Month</i>	<i>What to do</i>
July, August, September	Give plants warm water treatment, if necessary, before planting, as advised on p. 106. This will control aphides, eel-worms, red spiders and tarsonemid mites.
Early May	Dust with sulphur before flowering to keep down mildew and red spider.
Early June	Spray with nicotine and a detergent, $\frac{1}{4}$ oz. nicotine, 1 oz. Shellestol, to 10 gall. water, to control aphids.
Mid-June Early September	Spray again as above. Go over rows, and plants which are showing yellow edges to the leaves, that are looking dwarfed, or whose leaves are going small and crinkled, should be dug up and burnt. These will be virus-infected plants.

## Chapter XIII

### FIGS, GRAPES, NECTARINES, PEACHES AND QUINCES

#### Figs

If a fig is to be grown it must be given careful treatment or it isn't worth while planting. It seems to do best against a south fence or wall in the open, or may be grown as a pot plant on a sunny terrace or veranda.

#### SOIL

What is more important than soil is root restriction. When a fig's roots can be confined to a hole 4 ft. square and 3 ft. deep, lined with cement or bricks, the heaviest crops result.

Another method is to plant a fig in a 12-in. pot and plunge it, the pot being lifted each winter and the roots which 'climb' over the pot pruned back.

Yet another method is to plant in fairly poor soil and then every year to do some root pruning in the winter. The plan is to dig a trench 2 ft. deep or so, 4 ft. away from the main trunk of the tree in a half-circle. All roots met with during the excavation are cut off.

It is most important also that the branches should have plenty of sunshine and air, so that the wood and fruit can ripen. The tree should also be given shelter and should be planted where it can have the maximum warmth in the garden. Train it against a south wall.

## FIGS, GRAPES, NECTARINES, PEACHES AND QUINCES

### BEST TYPES TO GROW

Choose a fan-shaped tree for planting against this wall, and a bush-shaped tree for planting, say, in a pot for the veranda.

### PRUNING

The fig bears its fruits on the previous year's wood. All pruning done should therefore bear this in mind. A certain amount of the old wood should be cut out each season so as to make room for young wood. Whole branches may be cut away.

Though three separate crops will ripen under glass or in the open in the Mediterranean area, only one crop will ripen out of doors in this country.

### SUMMER PRUNING

Fruit-bearing shoots may be stopped to within five or six leaves at the end of August. Stopping earlier than this causes the too early development of fruit. In order that it may stand the winter the fruit should be no larger than a pea when November comes. It is this incipient fruit which then grows out and ripens the following summer. Any fruits found on the tree in December larger than this should be removed.

### ROOT PRUNING

Trees that are making nothing but strong growth and are not fruiting successfully may be dug up in the winter-time and have about one-third of their roots removed. It is the strong-growing, thick fleshy roots which should be cut back, and not the fibrous ones.

## FRUIT GROWING AND PRESERVING

### MANURING

Do not manure a fig tree, or it makes excessive growth. Be prepared, however, to give an occasional thorough flooding with water in a droughty summer. Even this may not be necessary in some soils.

### PLANTING

Plant any time in the late autumn or early winter, 9 in. deep. Never manure at planting time. A mulching of horticultural peat may be given in the following May.

### PICKING

Never pick figs until they are thoroughly ripe. They must ripen properly on the tree.

### VARIETIES

Bourjasotte Grise, good flavour, rich, sweet, medium size, reddish-brown fruits.

Brown Turkey, heavy cropper, excellent flavour, large, brownish-purple fruits.

Brunswick, large reddish-brown fruits, good flavour.

White Marseilles, does well in pots, heavy cropper, hardy, yellowish-green fruits.

### Grapes

Usually grown under glass in this country, but vines may be fruited out of doors in a warm sunny situation, preferably against a south wall.

### SOIL

Grow best when a special bed is prepared for them. A hole should be dug, say, 3 ft. deep and 4 ft. square—in

## FIGS, GRAPES, NECTARINES, PEACHES AND QUINCES

the bottom of which should be placed a 6-in. thickness of broken brickbats or stones. The remainder of the hole should be filled in firmly with a compost consisting of, say, 2 parts good soil,  $\frac{1}{8}$  part burnt earth or wood ashes,  $\frac{1}{3}$  part ground chalk or old mortar,  $\frac{1}{16}$  part bone meal.

### PRUNING

When young the rod should be cut back hard for the first two or three years, so as to encourage strong growth.

When a good strong rod has been grown, laterals, or side growths, should be encouraged every 18 in. along the rod, these being cut back each winter to within one prominent bud.

Where vines are to be trained on the fan system, the rod should be shortened back to 18 in. after planting, and the shoots that arise should be trained out fanwise. Thus a good root system will be built up. The following winter the lower shoots will be cut back to within 3 ft. of their base and tied horizontally to the wires, one on either side of the main stem. The main shoot will then be trained perpendicularly and be shortened back to 4 ft. The laterals which break out on the lower side of the stems, as well as the horizontal shoots, will be rubbed out during the summer. Laterals, too, which grow on the upper side of the stems closer than 12 in. the one to the other should be removed.

With the central stem, side growths should be retained every 18 in., and these will form the horizontal branches which will be trained out on the wires in the winter.

It is when the horizontal branches have grown out well that they may be pruned hard in the winter as advised for the cordon system.

## FRUIT GROWING AND PRESERVING

### SUMMER PRUNING

When more than one lateral grows on a spur the weaker one or ones should be removed.

All growths should be pinched back at two leaves beyond the place where the bunches of fruit are formed. If no bunches form, prune back to the fourth leaf from the base of the shoot. Any subsequent growth which develops as the result of this summer pruning should be pinched back to within one leaf.

### MANURING

A top dressing of well-rotted farmyard manure or composted vegetable refuse may be given round about the vine in May each year.

In addition a good fish manure with a 10 per cent. potash content may be applied for 4 or 5 ft. around the main rod in December each season. Other than this no special manuring should be necessary.

### PLANTING

Young vines seem to do best when planted as single cordons 6 in. away from a wall and 4 ft. apart. The roots should not be buried deeper than 4 in., and planting is best done early in November. Vines need planting very firmly, and it is better for this reason not to plant when the soil is sticky.

After planting, give a mulching of strawy manure, horticultural peat or leaf mould, in order to protect the shallowly planted roots from frost.

### VARIETIES

Black Hamburg—a beautiful black grape. Has juicy rich flavour, probably the best out-of-door variety.

## FIGS, GRAPES, NECTARINES, PEACHES AND QUINCES

Royal Muscadine—early, free bearing, white. Fruits rich, sweet but small.

Grove End Sweetwater—early, small white, round fruits, very hardy. Unfortunately fruit will not keep after picking.

### SPRAYING PROGRAMME

Month	What to do
December	Spray rods with 5 per cent. solution of good tar distillate wash.
April	Spray with white oil (petroleum emulsion) to prevent red spider and mealy bugs, if necessary.
Summer	Spray with liquid derris to control any pests seen.
Autumn	After picking, spray with lime sulphur, using 3 per cent. solution if mildew has been bad.

## Peaches and Nectarines

There is so little difference between the treatment of peaches and nectarines that they are classed together. Actually the nectarine is a smooth-skinned type of peach.

### OIL

Both peaches and nectarines prefer a well-drained soil, 'limey' in character. They will, however, grow well in any ordinary garden, providing the situation is sheltered and the trees are trained against south or south-west walls or fences. Protection with fish netting should also be given against the spring frosts.

Some have grown peaches quite successfully in the open bushes. This method of growing peaches is becoming more and more popular.

**BEST TYPES TO GROW**

The fan-shaped tree is the most satisfactory type for growing against a wall or fence.

In the southern parts of England, and particularly in the south-west, it is possible to grow both peaches and nectarines as bushes.

**STOCKS**

The best stock for the ordinary garden is undoubtedly the Common Mussel. This ensures trees of medium size which come into cropping early.

**PLANTING**

This should be carried out in November or early December, no deeper than, say, 6 in. The union of the stock and scion should always be above soil level. It is usually quite easy to see this 'juncture.' Plant so that the stem of the fan-trained tree is at least 4 in. away from the wall. Spread the roots out evenly, cutting away any injured ones with the sharp blade of a knife. Firm the soil over the roots.

After planting, give a good mulching with strawy farm yard manure, horticultural peat or similar material.

**PRUNING**

The fruit is borne on shortish, well-ripened shoots of the previous season's growth.

When the tree is young, the pruner should aim to furnish it with equal-sized branches radiating from the main stem. It is necessary, therefore, to see that the lower branches are well developed and to prevent the central branch from growing grossly ahead.

Prune in conjunction with the wiring. See that the

## FIGS, GRAPES, NECTARINES, PEACHES AND QUINCES

wires are spaced 18 in. apart along the wall, parallel to one another, and 4 in. away from it. Old wood may be cut away in the winter so as to aim at a balanced framework, the branches being tied to the wires so that the whole area devoted to the tree is equally covered.

In the case of bush trees the pruning should consist of cutting back the old hard wood in April so as to encourage young growths on which the fruits are borne. Keep the centre of the tree fairly open.

### SUMMER PRUNING

A good peach or nectarine grower will do the majority of the pruning in the summer. Large numbers of laterals or side growths grow out each spring. Only three, or at the most four, should be retained on each branch. The surplus shoots should be pinched or rubbed out when they are an inch or so long. Leave a lateral at the base of each length of wood which is fruiting—one at the middle and one towards the end. It is the young shoot at the base of the fruiting wood which should take its place after the fruit has been picked.

### MANURING

Dried blood should be applied at the beginning of February at 3 oz. to the square yard; bone meal at 3 oz. to the square yard and sulphate of potash at 1 oz. to the square yard should be given in November. Where sulphate of potash cannot be obtained 5 oz. of wood ashes per square yard should be used instead.

Early in June a mulching of farmyard manure, horticultural peat or properly composted vegetable refuse should be spread on the ground all around the stems for 2 or 3 ft. to a depth of 3 in.

## FRUIT GROWING AND PRESERVING

After the fruit has stoned weak liquid manure may be applied in the summer. This can be bought as Liquinure in bottles and be diluted as necessary.

On acid soils ground chalk should be given every three years in January at the rate of  $\frac{1}{2}$  lb. to the square yard.

### ROOT PRUNING

It is sometimes necessary to root-prune peaches and nectarines every three years after planting when they are growing as trained trees against walls. A trench 18 in. deep should be dug in the winter around the tree 4 ft. away from the stem, all roots that are found this distance being cut off.

### CULTIVATION

Regular hoeing may be necessary in the summer in order to create a dust mulch and keep down weeds.

In the winter the soil will be dug over very shallowly.

In hot weather with wall trees fork over the ground and give a good flooding.

### FROST PROTECTION

Be prepared to protect the blossoms in March and April from frost by hanging fish netting or old curtains or some similar material over the wall trees.

### THINNING

When the fruits are the size of a small nut, thin out, leaving about twice as many fruits as will be eventually required.

When the fruit is 1 in. in diameter and over—that is, after stoning has finished—thin out again, leaving the fruits 9 in. apart.

## FIGS, GRAPES, NECTARINES, PEACHES AND QUINCES

### PICKING

Feel the fruits very carefully at their bases, and when soft gather them by placing the whole hand under each specimen and lifting it carefully.

### VARIETIES

(Name, Ready, Quality, Remarks)

#### *Nectarines*

Early Rivers. End July. Excellent. Hardy, large, oval, deep red fruits.

Humboldt. Mid-August. Very good. Fairly large, crops well, good flavour.

John Rivers. Mid-July. Very good. Crimson, heavy cropper, large.

Lord Napier. Early August. Good. Excellent cropper, very hardy. Perhaps the best outdoor variety. Fruits cream with red flush.

#### *Peaches*

Duke of York. Mid-July. Good. Good all-round, fruits deep crimson, large.

Hale's Early. Late July. Good. Large, round, heavy cropper, fruits crimson with deeper stripes.

Peregrine. Mid-August. Excellent. Probably the best outdoor variety, heavy cropper, very juicy, fruits bright crimson. The best variety for planting in the open as a bush tree.

Bellegarde. Mid-September. Very good. Probably best flavoured, excellent cropper, hardy, fruit golden yellow with dark red flush.

## FRUIT GROWING AND PRESERVING

### SPRAYING PROGRAMME

Month	What to do
December	Spray with a tar distillate wash, using a 5 per cent. solution.
Late February, Early March	Spray with lime sulphur, using 3 per cent. solution to kill red spider and prevent leaf curl.
October	Collect and burn all diseased leaves.

### Quinces

One of the best fruits to make jam or jelly. It is very rich in pectin, and therefore when mixed with other fruits helps to ensure that the jam sets properly.

### SOIL

Grows on any garden soil, does particularly well, it seems, when planted near water.

### PLANTING

Plant any time during the autumn. Half-standards need 15 ft., bushes 10 ft. and full standards 20 ft. Plant shallowly but firmly.

### PRUNING

Prune young trees up to, say, five years of age by cutting back the leaders or one-year-old end growths by about half for the first three years and by quarter the next two.

After this very little pruning is necessary; straggling wood should be cut out only. The branches should be thinned here and there so as to let in light and air. Branches should not be allowed to cross or rub.

## FIGS, GRAPES, NECTARINES, PEACHES AND QUINCES

### MANURING

As advised for pears.

### PICKING

The fruit should be left on the tree as late as possible; in fact, it is usually picked at the end of October.

Quinces are very aromatic and should always be stored apart from other fruits. They may be placed in any frost-proof shed or room until they have turned yellow. This usually takes three months.

### VARIETIES

Bereczki. Strong grower. Very large. Excellent flavour, crops when tree only two years of age. Fruit pear-shaped.

Common Quince. Fairly strong. Round, large. Apple-shaped, golden yellow flesh, excellent flavour.

Portugal. Vigorous. Medium. Pear-shaped, mild in flavour, flesh turns red when cooked.

## Chapter XIV

### FRUIT BOTTLING

THERE is nothing really mysterious about bottling. It is merely a case of sterilising the fruit and then excluding the air by providing a vacuum. Fruit can be sterilised at much lower temperatures than vegetables because of the acids they contain, which help in the process of killing the bacteria.

It is always best to use special bottles for the purpose, though latterly special caps and clips with rubber rings have been manufactured which fit perfectly to any 2-lb. jam jar. These Snap Closures, as they are called, may be obtained from any hardware merchant or similar stores.

The true vacuum bottle should withstand the heat of sterilisation and have a metal or glass lid. A new rubber ring should be used each year, and this acts as a washer between the lid and the container.

A spring clip or screw band should be provided which holds the lid in position during the heating process and during the time the fruit cools off afterwards.

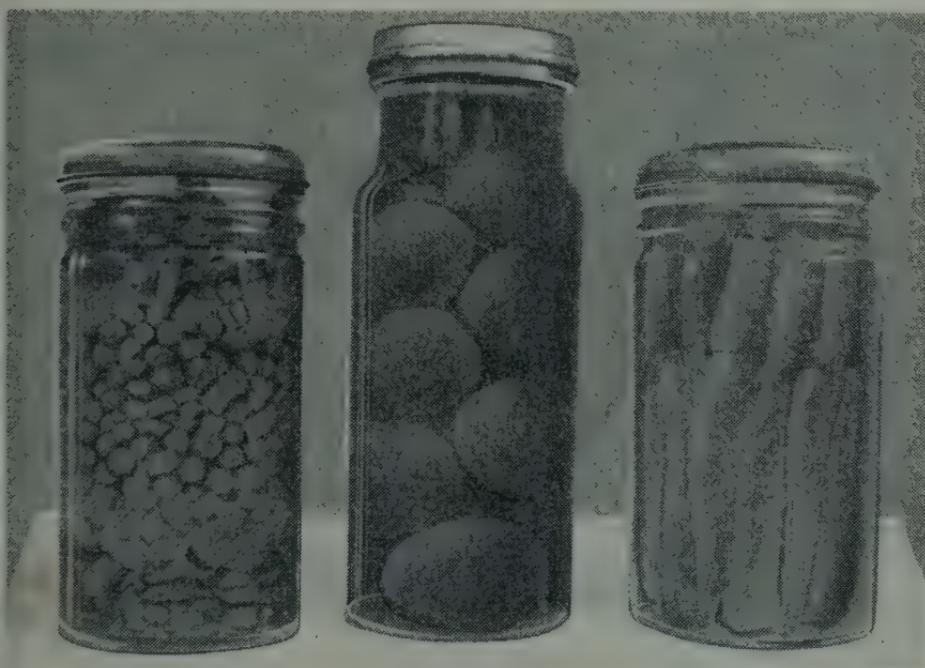
All kinds of bottles can be obtained, some made of green glass, others of clear glass, some which contain 1 lb. of fruit, and some as large as will contain 7 lb.

It is most important that the rim on which the lid or cap rests should not be chipped or damaged in any way, for the air might enter through this. The rim of the lid should also be perfect and must be without flaw. The rubber ring (as has already been said) must be a new one and must not contain any flaws either.

## FRUIT BOTTLING

### CHOOSING THE FRUIT

For bottling, choose fruit that is free from blemish and sound. It should be just ripe and still quite firm. Try to bottle as soon after picking as possible. Grade the fruit into sizes, placing the small fruits in one bottle and the



*Some examples of the author's bottling which have been preserved over 26 years and which are still in perfect condition.*

larger ones in another. This ensures greater economy of bottles, for the fruit fits in better that way.

Do not attempt to bottle over-ripe or blemished fruit. This should be made into jam or jelly.

Some fruits, like yellow egg plums and gooseberries, may be bottled on the unripe side. Some fruits, like pears, may have to be picked unripe and then be ripened on a

## FRUIT GROWING AND PRESERVING

shelf in a cool room for two or three weeks until in the right condition. It is never wise to attempt to bottle pears when they are hard.

### FRUIT PREPARATION

Always be prepared to wash fruit in plenty of cold water to make certain that it is clean. This is especially necessary when it is bought, or when it is grown in a smoky district. It is seldom necessary, however, to wash soft fruit. This should, on the other hand, be picked over carefully so as to remove any poor, unripe or undeveloped specimens.

Soft fruit will, on the other hand, need special preparation. There is the topping and tailing of gooseberries, the stalking and plugging of raspberries, the stalking of red and black currants, etc. Sometimes it is necessary in the case of loganberries and blackberries to steep them overnight in salt and water in order to cause the maggots to come to the surface. At least an ounce of salt should be used per gallon of water.

The bottles should be washed well in warm water and should then be rinsed in clean cold water and left standing upside down until ready to use. When the bottles are moist on the inside it will be found easier to pack the fruit into the bottle, for it slips into the right position more easily.

The nearer the fruits are in size the one to the other per bottle, the easier it is to pack them in tightly and the greater the quantity that can be got in.

Once all the fruit has been packed firmly (and it is surprising how many more layers can be got in after you think the bottle is full) cold water should be poured into the bottle and should be emptied out afterwards by hold-

## FRUIT BOTTLING

ing the fingers across the mouth to prevent the fruit from falling out. It is possible to obtain special perforated discs which can be placed on the mouth of the bottle when it is held upside down to drain the water away. This rinsing, as it is called, is one of the refinements of good bottling and is, of course, not vital to its success.

### BOTTLING—THE CHEAPEST METHOD

Many women do not want to buy special jars for bottling purposes, nor do they want to purchase special vacuum closure tops with the springs and rubber rings, though these, as has already been said, are inexpensive.

Bottling in ordinary jam jars is quite a simple process without special clips or tops. The jam jar should be placed upside down on a sheet of paper placed on the oven shelf. The oven need not be hot, and in fact those with a Regulo should set it at 0 or 1. As many jars as possible may be put in the oven at a time. An hour or so later, when the jars are warm, they may be taken out two or three at a time to be filled as quickly as possible with the fruit. This should be piled right up so that it even appears over the top of the rim of the bottles. They should then be put back in the oven, and directly the fruit starts to shrink a patty tin may be placed over the top of each bottle so as to prevent the top layer of fruit from becoming baked. Where sufficient patty tins are not available it is usually possible to put a baking sheet or tin over all the bottles at a time.

If the Regulo is now set at 3, or in the case of those without Regulo, if the oven door is kept closed, and the heat is a little greater, the fruit should have shrunk down to the shoulder of the bottle at the end of  $\frac{3}{4}$  or 1 hour.

The bottles are then ready to come out one at a time.

## FRUIT GROWING AND PRESERVING

It is most important that they should be taken out of the oven to be filled with boiling syrup *one at a time*, as otherwise the heat is lost and the jar may not be properly sterilised. The hot jam jar should always be placed on a dry wooden table or on a dry cloth on an enamelled table.

While the jars are in the oven a syrup should be prepared consisting of  $\frac{1}{2}$  lb. sugar to 1 pint of water, though in times when sugar is so scarce boiling water may be used alone. The advantage, however, of using sugar at the time of bottling is that you save approximately twice the amount of sugar when serving the fruit later.

Fill the hot jars containing the fruit with the boiling syrup so that it covers the fruit and is just above the shoulder of the bottle. Do not fill any higher than this. Be sure to cover each bottle over one at a time, so deal with the one bottle before you bring the next one out of the oven. It is important to cover over while the steam is present over the top of the syrup, for this it is that is excluding the air and so will be the cause of the vacuum that is vitally needed when the fruit has cooled down.

Various materials are used for covering over the bottles. In the country pigs' bladders are often prepared specially for the purpose, being of a leathery texture; these are tied down and then are pasted over with a thick flour paste. Some prefer to use a piece of calico which has been dipped into a thick rice starch. This should be cut to the right size first of all, so that when it is put over it overlaps the top well, and fits snugly round the neck. When placed over, it should be pressed down tightly, squeezing the edges with the two hands and turning the bottle round from time to time.

The simplest method of all is what is known as the Three Paper method. Pieces of paper should be cut so

## FRUIT BOTTLING

that they overlap the rim of the jam jars about  $\frac{1}{2}$  in. Any paper will do, with the exception, of course, of very thin paper like tissue paper, blotting paper, or paper that is over-thick. Paste the first disc of paper prepared with a thick flour-and-water paste, and press it over the top of the bottle so that it overlaps  $\frac{1}{2}$  in. or so all round. Then paste the top of the paper with some more of the thick flour paste. Place the next disc of paper into position (this time newspaper will do quite well and acts as a sort of buffer), and press this down firmly, turning the bottle all the time. When firmly stuck and in position, paste the top over well once more with a thick flour paste and press the third piece of paper into position over the top. Paste this again in its turn with the thick flour paste, and then stand the bottle aside for at least an hour to dry off.

Describing this system in a book seems to take much longer than to do in practice. The papers can all be cut into circles beforehand, and if a good brush is provided it doesn't take a minute to paint the flour paste into position.

It is surprising how effective the three pieces of paper are in acting as a seal, and there is no cheaper method known.

Whatever method is adopted to seal the jam jars, it is necessary to store the bottles in a dry, airy place. A hot cupboard is not really suitable nor a damp one. The best place is a shelf in the kitchen or in a passage.

Do not be tempted to lift the bottles down from time to time to dust them, or there is a danger that they will be tipped even ever so slightly sideways, and then the fruit juice or sugar solution will come into contact with the calico or paper and so cause it to rot away or let in air. It mustn't be expected that fruit bottled in this way will

## FRUIT GROWING AND PRESERVING

keep for certain much later than the new year. Sometimes it does, of course, without any trouble at all, but the object of this simple method of bottling is really to keep fruit until, say, the middle of January. Those who want to keep it longer than this should undertake what is called the Scientific Method.

Just one or two more hints. (1) Be sure not to let mice or rats nibble the starched calico or paper. They are apt to do this if they get the chance. (2) With soft fruits it is better to pour the fruits of one bottle into another when taking them out of the oven, for they shrink so much. (3) Fruits that are particularly suitable for bottling by this method are damsons, cherries, gooseberries, plums and rhubarb. (I have included rhubarb, though of course it is really a stem and not a fruit.)

### THE SCIENTIFIC BOTTLING METHOD

Though this method has been headed 'scientific,' it is by no means difficult to carry out. It is a method, too, which gives perfect results. It does, however, entail the purchasing of vacuum bottles.

These are merely glass containers which have metal or glass lids. A flat or round rubber ring is used to act as a washer between the containers and the lids. Clips of a spring type or large screw bands are provided to hold the lid firmly in position during the process of sterilisation. They also keep the top down tightly and thus prevent the air entering. Bottles may be bought in all sizes, usually 1 lb., 2 lb., 3 lb. and 7 lb.

There is no need for the bottles to be clear glass, unless, of course, you are going in for showing. On the whole small-sized bottles are best for soft fruit, and the wider-mouthed jars for apples, pears, plums, etc.

## FRUIT BOTTLING

Always make certain before using the bottles that the rim around the top is not cracked or chipped. The rubber ring rests on this rim, and if there is any chip the air will enter and make correct sterilisation impossible.

The rubber rings should always be new ones, for they deteriorate when more than a year old. They should be scalded in hot water so that any precipitated chalk may be washed off them.

The bottles should then be placed in what is known as a 'steriliser.'

## THE DEEP CONTAINER FOR STERILISING

Those who buy bottling outfits will have the necessary deep container known as the steriliser. These can be obtained from the ironmonger or direct from George Fowler Lee, of Reading.

Any deep vessel will, however, answer the purpose, such as a saucepan, a fish kettle, or even the copper used for boiling clothes. It should be deep enough, in fact, so that when the bottles are in it they are completely covered by the water.

Purchased sterilisers have perforated false bottoms to them which allow the water to circulate underneath the bottles and prevent them, therefore, from resting on the bottom of the container. This prevents any danger of the bottles cracking. It is quite simple in the saucepan or fish kettle to put strips of slatted wood on the bottom of the vessel first of all and place the bottles on these.

## USING A THERMOMETER

It is necessary to use a thermometer in order to find out the actual temperature. Dairy thermometers can

## FRUIT GROWING AND PRESERVING

usually be bought for 3s. or 4s., care being taken before purchasing them to see that they will register up to 218° or 240° F. Floating thermometers are ideal, because when placed in the water they never disappear.

### FRUIT PREPARATION

Get the fruit ready as advised on page 122. Pack it tightly in the bottles and then fill up with cold syrup or cold water. It is always better to use syrup, for sugar used at bottling time saves twice the amount of sugar afterwards. Normal formula—1 lb. of sugar to 2 pints water. Pour this syrup into each jar until  $\frac{1}{8}$  in. from top.

Having put in the syrup or water, put the rubber ring in place, put on the lid and then fix into position the clip or clips, or screw bands. When a screw band is used it has to be screwed down firmly and then unscrewed half a turn. This is so that the air can escape while the bottles are in the steriliser. Nothing has to be done to the clips, for they give sufficiently to allow air to escape and then spring back into position again to keep the tops down tightly.

With the tops and clips in position the bottles should be placed in the steriliser or deep vessel and brought up slowly to the right temperature. The chart shows this quite clearly. They should then be left at that temperature for the correct time and at the end of the period should be removed one at a time, those with the screw tops being screwed down firmly. The bottles should be stood upright for 3 minutes on a wooden table and may then be laid on their sides until they are quite cold. The advantage of laying them on their sides is that this prevents the fruit from rising to the top.

When the bottles are perfectly cold, examine them by

## FRUIT BOTTLING

removing the clips or screw tops. It should be impossible to pull off the metal or glass tops with the fingers. The bottles may then be placed on a shelf without their screw tops or clips, and if wrapped in paper, particularly blue paper, the fruit keeps a better colour.

Always try and store in a dry place, for if the bottles get damp moulds may grow on the rubber rings, inwards into the bottles.

The clips and screw tops may then be given an oiling or vaselining and be put away until they are required next year. This prevents them from going rusty.

Should any of the bottles not be sealed properly—*i.e.*, the tops come off when tried—then new rubber rings should be used and the bottles put back into the steriliser, the process being repeated once more.

STERILISING CHART

Name of Fruit	Temperature necessary ( $^{\circ}$ F.)	Taking $1\frac{1}{2}$ hours to reach that temperature and remaining at that temperature for—
Apples	165	20 mins.
Blackberries	165	20 ,
Damsons	165	10 ,
Gooseberries	165	10 ,
Raspberries	165	10 ,
Loganberries	165	10 ,
Plums	165	10 ,
Rhubarb	170	15 ,
Pears	190	30 ,
Cherries	190	30 ,
Currants	180	20 ,
Plums, stoned	190	20 ,

It is important to take one and a half hours to reach the particular temperature in question and to ensure that the fruit remains at that temperature for the period stated.

## SPECIAL NOTES

*Soft Fruits*

*Blackberries*.—The fruit must be ripe and yet firm.

*Black currants*.—Use twice as much sugar as for other fruits if you wish to keep the colour.

*Red currants*.—See Black currants.

*Gooseberries*.—Use unripe gooseberries and little sugar.  $\frac{1}{4}$  lb. per pint of water is ample. If syrup is too thick the fruits shrivel. If no sugar is used the flavour is poor.

*Raspberries*.—Bottle the same day as picked. Pick straight into bottles if possible. Fruit loses colour easily so wrap bottles well before storing.

*Loganberries*.—Apt to be maggoty unless Derris has been used as advised in chapter on growing this fruit. Where there are maggots, soak fruit for 3 hours in salt solution. Formula—1 oz. of salt to 1 gallon of water.

*Stone Fruits*

*Cherries*.—Sour cherries do best. More can be got into a bottle if the fruit is stoned before using. Cheap hand-stoners may be got for this purpose from the ironmonger or direct from George Fowler Lee of Reading.

*Damsons*.—Dip for 2 minutes in boiling water before putting into bottles. The sticky ‘bloom’ is thus removed.

*Plums*.—If stoned and halved before packing, twice the quantity can be got into a bottle. In this case 2 lb. of sugar should be used per 1 quart.

## FRUIT BOTTLING

### *Top Fruits*

*Apples*.—Peel in salted water and stand the prepared fruit in the brine solution till ready to bottle. Formula —2 oz. salt to 1 gallon of water. Dip the fruit for 4 minutes in boiling water before packing in bottles, and then the flesh is softened and fits better into position. It is better to cut in fairly thin slices. Add a few drops of cinnamon essence to the sugar and the bottled apples will be particularly delicious.

*Pears*.—Never attempt to bottle pears until they are almost fully ripe. Prepare as advised for apples. When cooking pears are bottled they must be dipped in boiling water for 4 minutes beforehand as advised in the case of apples; cut into fairly thin slices.

### RESERVING FRUIT WITHOUT COOKING

It is possible to preserve fruit for several months without cooking or sterilising. All that has to be done is to wash the jam jars to be used carefully, and prepare the fruit in the normal way.

The fruit should then be placed uncooked into the jam jar, and the Campden solution poured over until all the fruit is covered.

The jar should then be sealed, preferably with a cork that can be waxed over, or by the use of a glass stopper. No metal should come into contact with this solution.

It is possible to use the three pieces of paper method advised in the Easy Bottling Method, provided that plenty of flour paste is used to seal the pores in the paper.

To make the Campden solution it is necessary to purchase Campden tablets from the chemist. One tablet should be dissolved in  $\frac{1}{2}$  pint of water and this is sufficient for preserving 1 lb. of fruit.

## FRUIT GROWING AND PRESERVING

Fruit preserved in this way is not suitable for resale, or for use, until it has been cooked.

This scheme has been devised by the Chipping Campden Research Station, where I went to take a fruit preservation course years ago.

## Chapter XV

### FRUIT DRYING

IT is surprising how few households bother about drying fruit, and yet it is not only an easy process but an inexpensive one also. The only disadvantage it has, perhaps, as against bottling is the time it takes, for you cannot hurry drying.

Dried fruit is much more uniform in taste and flavour than bottled fruit. All that has to be done is to see that it is soaked overnight or for several hours before it is used, and there is *no need* to cook it, for it has cooked itself, so to speak, during the drying process. Dried apple rings when soaked and baked in a tart or pie taste no different from fresh apples.

As drying is such a cheap operation it is worth while making some wire frames on which the fruit may be placed. The smallest-gauge wire netting should be used for the purpose, fixed to a frame. This is a good method of using up an old picture frame; the glass can be taken out, and the wire netting tacked on to the underside of the frame beading. Special strips of wood, of course, can be used to form a frame, and where wire netting is impossible to obtain, cheese cloth or butter muslin may be stretched tightly in between instead.

The fruit to be dried is then placed on the trays, having

## FRUIT GROWING AND PRESERVING

been prepared as advised under the special headings found in the following paragraphs.

There is no need to hurry over the drying process, and it is possible to do it by using the spare heat from an oven, either a coal, electric or gas, at the end of a morning's cooking. On the other hand, those who intend to proceed with drying methodically and continuously may get an oven going specially for the purpose, provided it is at a temperature of about  $150^{\circ}$  to  $160^{\circ}$  F.—i.e., the oven does not want to be very hot.

Choose fruit that is ripe but not over-ripe. Cut away all the damaged and diseased portions, and, provided this is done, 'specked' specimens can be used.

The fruits that can be dried are apples, pears, plums, black currants, cherries, raspberries and loganberries. The last four, however, are by no means as easy to do as the first three, neither do they give such good results when used afterwards.

### POTTED POINTS

Prepare fruit properly.

Lay evenly on trays.

Dry in an oven at a temperature of about  $150^{\circ}$ - $160^{\circ}$  F. Possible to dry over stove or in cupboard where there is dry heat.

Always heat slowly first.

If you dry quickly, outside skin will be hard and fruit will shrivel too much.

After drying, put fruit, still on trays, in ordinary room temperature for one day. This is called 'conditioning.'

Moisture is taken up. Fruit becomes softer, heavier, and is easier to pack.

## FRUIT DRYING

### NOTES ON INDIVIDUAL FRUITS

#### (a) Apples

After peeling and coring, the flesh of apples must be prevented from turning brown. To do this the apple rings should be prepared by being cut with a stainless steel knife to a thickness of  $\frac{1}{4}$  in. and should immediately be dropped into jam jars containing sulphur fumes and left there for 15 minutes. Every 4 minutes shake the jars. Keep the fumes in by covering the jars with a patty tin or lid.

To make sulphur fumes, burn flowers of sulphur on the lid of a tin and invert jars over the fumes. They soon become filled with the gas and should then be turned up the right way and be covered with a lid or patty tin—a saucer would do.

Once the apple rings are properly sulphured they are blanched and will keep white. They should then be threaded on to long sticks which should fit perfectly into the inside of the oven, either end resting on the ledge used for the oven trays or shelves. A large number of rods threaded with apple rings can be fitted into an oven in this way. The temperature should be  $150^{\circ}$  F.

If preferred, the rods may be strung together on strings and be slung from hooks in the ceiling or mantelpiece. The rods should always be parallel to the floor, so that all the rings can be kept apart.

In the oven at  $150^{\circ}$  F. they should dry in about 5 hours. If they are hung over the kitchen stove or in a warm kitchen the operation may take three or four days. When not actually drying, cover up the rings with some cheese cloth or butter muslin to keep them from getting dusty.

As advised in Potted Points, the fruit will need 'con-

ditioning.' When they first come out of the oven they will be quite tough and hard, and after the day's conditioning in a bedroom or living room they should feel like chamois leather. Put the rings into jam jars and cover as for jam, or pack into greaseproof paper, making a kind of parcel and placing this in a cardboard or wooden box.

7 lb. good apples = 1 lb. dried rings.

*Preparation for Use.*—Most recipes say soak the rings overnight. It is much better, however, to soak for a whole day and night. See that the rings have sufficient water. If they absorb one lot, give some more. Cook till tender in the water in which they were soaked. It is seldom necessary to add much sugar, but what has to be added should be given at the last possible moment.

### (b) Pears

Cut into quarters and not into rings. Otherwise treat as advised for apples, but leave *twice* as long in the sulphur. This turns the flesh ivory white and makes it look beautiful.

Dry at  $160^{\circ}$  F. for 6 hours. Condition afterwards for 12 hours in ordinary room. Pack as for apples.

*Preparation for Use.*—Soak for a day and night and stew in water used for soaking.

### (c) Plums

Plums are the easiest to do and undoubtedly the most successful. They produce the most delicious prunes. Choose the largest varieties of plums, such as Victoria or Czar, for the purpose. Use the perfect ripe specimens.

Start at a temperature of  $110^{\circ}$  F., no higher, or the skins will split. After 3 hours raise to  $160^{\circ}$  F. After 4 hours raise to  $170^{\circ}$  F. Keep at this temperature till the

## FRUIT DRYING

plums look like prunes and yet are still soft. It is always better to under-dry than over-dry.

Examine when cool, and if not of the same texture as prunes, dry again at  $170^{\circ}$  F. for 1 hour. Do not over-dry or fruits will be hard and 'cindery' when cooled.

Condition in an ordinary room temperature for a week. Then store as advised for apples.

*Preparation for Use.*—Cover with plenty of water and leave in soak for thirty-six hours. It is usually possible to serve the plums at the end of this period without cooking. If necessary, however, stew for a short time.

When Victorias are used no sugar will need adding afterwards, but with Czars and other more acid plums add 5 oz. of sugar to each pound of dried plums used.

### (d) *Currants, cherries, raspberries*

Ripe currants do not produce the dried currants bought at the grocer's shop. The currants we buy are obtained by drying a special type of small grape.

All these fruits lose their colour when dried and do not plump up sufficiently well when soaked.

## Chapter XVI

### FRUIT CHUTNEYS, FRUIT PICKLES AND FRUIT SAUCES

THOSE who are growing their own fruit—and this book tries to show that this is possible in almost any garden in the country—usually have part of the crop that is specked or damaged in some way, and this can usefully be turned into pickles and chutney.

It is, in fact, a very useful way of using up fruit that otherwise might be wasted. Sometimes there is too much at a time, and while some may be bottled the rest may be made into chutney.

The French complain that we are a sauce and chutney loving nation, and there is no doubt that this is true, but there seems to be no reason why we should change our habits all the time that we can produce what we need.

Try, therefore, some or all of the recipes given in this chapter. You will find them not only useful on the table to add piquancy to a meal, but you will be able to use them for flavouring stews or soups and for using in other dishes.

Ask those who have lived in India whether they could eat curry without chutney, and see what they say!

#### *Apple Chutney*

1 lb. apples	$\frac{1}{2}$ lb. raisins or sultanas
$\frac{1}{2}$ lb. sugar	$\frac{1}{2}$ oz. garlic, if liked
Good pinch cayenne	$\frac{1}{2}$ oz. mustard seed
1 pint vinegar	

## FRUIT CHUTNEYS, PICKLES AND SAUCES

Peel and core the apples and cut into thin slices. Stone and chop raisins or chop sultanas. Cut garlic very fine. Put all in pan with other ingredients and boil for  $1\frac{1}{2}$  hours.

### *Apple and Tomato Chutney*

3 large cooking apples	2 small onions
$\frac{1}{2}$ cup raisins or sultanas	$1\frac{1}{2}$ teaspoonfuls salt
1 cup mixed spice	1 pint vinegar
6 large tomatoes	

Peel and core apples and cut up finely. Skin tomatoes and cut into small pieces. Add other ingredients (with spices tied in a bag) and boil with the vinegar for  $1\frac{1}{2}$  hours.

### *Apple and Onion Chutney*

1 lb. apples	1 lb. onions
Good pinch mustard	$\frac{1}{2}$ oz. salt
1 oz. sultanas	1 lb. tomatoes
1 pint vinegar	$\frac{1}{2}$ oz. ground ginger
3 oz. sugar	Pinch cayenne pepper

Peel and core apples, skin the tomatoes and cut all up finely. Peel and chop onions. Mix all ingredients together and simmer for  $2\frac{1}{2}$  to 3 hours. The mixture should be stirred frequently.

### *Apple and Date Chutney*

2 lb. apples	1 lb. sugar (brown for preference)
$\frac{1}{2}$ oz. mustard seed	1 quart vinegar
1 lb. tomatoes	Salt a little
1 lb. onions	
1 lb. dates	

## FRUIT GROWING AND PRESERVING

Peel and chop onions, apples and tomatoes. Chop dates. Mix all ingredients together thoroughly, place in pan and simmer for  $2\frac{1}{2}$  hours, stirring frequently.

### *Gooseberry Chutney*

1 lb. green gooseberries	1 quart vinegar
2 lb. sugar (brown if possible)	1 lb. rhubarb
2 oz. ground ginger	1 lb. sultanas

Chop sultanas, rhubarb and gooseberries. Cook till quite soft in the vinegar. Place cayenne, ginger, sugar, sultanas into a basin, mixing thoroughly. Then add the rhubarb, gooseberries and vinegar. Mix well and bottle.

### *Beetroot and Apple Chutney*

1 lb. apples	1 lb. beetroot
2 onions	1 pint vinegar
$\frac{1}{4}$ teaspoonful ground ginger	$\frac{1}{2}$ lb. sugar
$\frac{1}{2}$ teaspoonful salt	Pinch cayenne

Boil beetroot till tender. Peel and cut into cubes. Peel onions and apples and cut up finely. Add sugar and vinegar and boil for 1 hour. Then add beetroot and simmer for a further  $\frac{1}{4}$  hour. Bottle when cold.

### *Damson Pickle*

1 $\frac{1}{2}$ lb. damsons	1 pint vinegar
1 lb. sugar	Seasoning (cayenne, cloves)

Bring fruit and vinegar to the boil and let it stand for a day. Boil the liquid and the sugar together for about 10 minutes, then put in the damsons and the seasoning. Boil to a pulp. Tie down when cold.

## FRUIT CHUTNEYS, PICKLES AND SAUCES

### *Damson Cheese*

Wash, weigh and slice the damsons and place in a cool oven for several hours. Pass through a sieve, and add sugar at the rate of 1 lb. to every pound of fruit pulp. Boil until the syrup sets stiffly when a little is placed on a cold plate. Tie down when cold.

### *Fig Pickle*

1 lb. figs	1 dessertspoonful cloves
1 lb. brown sugar	(ground)
1 teaspoonful allspice	1 teaspoonful mace
$\frac{1}{2}$ pint vinegar	

Boil sugar and vinegar till thick, add cloves, allspice and mace. Simmer for a few minutes, then add figs, and simmer gently for 2 hours. Put into jars and cover when quite cold.

### *Grape Pickle*

Grapes (seedless for preference)	$\frac{1}{4}$ oz. cinnamon
	$\frac{1}{2}$ lb. brown sugar
1 quart vinegar	1 oz. allspice

Pack grapes in jar (a small portion of stem being left on each grape). Boil together vinegar and other ingredients. When cold pour over the grapes. Tie over tightly till required.

### *Blackberry Pickle*

1 quart blackberries	$1\frac{1}{2}$ oz. allspice
2 lb. sugar	$\frac{1}{2}$ oz. ground ginger
1 pint vinegar	

Steep blackberries and ginger for 12 hours. Then bring

## FRUIT GROWING AND PRESERVING

the vinegar to the boil. Add berries and boil for  $\frac{1}{2}$  hour. When cold add spice and ginger. Mix thoroughly and put into jars. Cover when quite cold.

### *Plum Pickle*

4 lb. ripe plums	2 lb. sugar
$\frac{1}{2}$ oz. cloves	1 quart vinegar

Boil vinegar, spices and sugar together. Put fruit into bottles and pour boiling liquid over them. Leave to stand for three days, repeating process three times, adding more vinegar if necessary, thus taking nine days to complete the operation. Tie down when quite cold. This pickle can be used in a fortnight's time.

### *Pear Pickle*

$\frac{1}{4}$ pint vinegar	3 lb. stewing pears
Few drops lemon essence	$1\frac{1}{2}$ lb. sugar
$\frac{1}{4}$ oz. root ginger (bruised)	Few cloves

Peel pears and place in cold water. Boil other ingredients for 2 minutes. Slice pears and boil till tender. Cover the pan and keep in the steam till sufficient liquid covers the fruit. Mix all together and simmer for 15 minutes. Bottle when quite cold.

### *Plum Sauce*

$1\frac{1}{2}$ pint plums	$\frac{1}{4}$ oz. chillies
3 oz. currants	2 onions
$\frac{1}{2}$ teaspoonful grated nutmeg	$1\frac{1}{2}$ pints vinegar
2 oz. salt	$\frac{1}{2}$ teaspoonful ground ginger
1 oz. mustard	$\frac{1}{2}$ oz. allspice
1 lb. sugar	

To 1 pint of the vinegar add the plums, onions and

## FRUIT CHUTNEYS, PICKLES AND SAUCES

currants, and boil for  $\frac{1}{2}$  hour. Strain the liquid and place it in a pan with the rest of the ingredients. Simmer all together over a gentle heat for about 1 hour. Bottle when quite cold.

### *Emergency Chutney*

1 lb. jam (plum or apricot)	1 onion
Kernels from fruit stones	Salt and pepper

Add all ingredients together and mix with vinegar to taste. This chutney can be used immediately.

### *Rhubarb Chutney (Uncooked)*

2 lb. rhubarb	$\frac{1}{4}$ teaspoonful cayenne
$\frac{1}{2}$ lb. raisins	pepper
$\frac{1}{2}$ teaspoonful salt	1 dessertspoonful ginger
1 lb. onions	1 dessertspoonful mustard
$\frac{1}{2}$ lb. sugar	$\frac{1}{2}$ pint vinegar
$\frac{1}{2}$ lb. currants	

Put rhubarb, onions, currants and raisins through the mincer and then add other ingredients. Leave to stand for a day. Mix thoroughly and if liked add a little more pepper.

### *Plums Pickled like Olives*

Green plums	Mustard seed
Vinegar	Salt

Make a pickle of vinegar and salt. Bring to the boil and pour over green plums. Let them stand for 12 hours. Drain off the vinegar. Make it hot again and pour over the plums once more. Bottle and tie down when cold.

## Chapter XVII

### JAM AND JELLY MAKING

DIRECTLY you come to discuss jam making in feminine company you find that most people have their own ideas on the subject. You are told that this recipe is very good, that that recipe is excellent, but few if any of those present realise what may be called the theory of jam making.

It is worth while studying the theory, for it is only in this way that you can realise the important part that pectin plays. Pectin is the substance that causes the jam to jell. Fruits that have very little pectin in them, like strawberries, do not produce a jam that sets well. Fruits, on the other hand, that have plenty of pectin present, like the gooseberry, usually set without any difficulty.

#### WHAT PECTIN DOES

Fruits, then, differ in the amount of pectin they contain. Currants, gooseberries, loganberries, damsons, plums, raspberries and blackberries are rich in pectin, and when jam is made with any of them it should set without difficulty. Apples, cherries, rhubarb and strawberries contain very little pectin indeed, while the marrow contains none at all. When jam is made, therefore, with these alone, it cannot set well.

## JAM AND JELLY MAKING

Then again, the content of pectin in fruit will vary from one year to another. In wet years fruits contain less pectin than in dry, fine, sunny years. Jam, therefore, will set better from fruit picked in a sunny season than from fruit gathered during rainy periods.

Pectin also alters as the fruit ripens. It is therefore important to have fruit that is just ripe, for if it is over-ripe then the pectin will have been converted into pectic acid, and as a result the jam will not set well.

It is always possible, however, to mix over-ripe fruit with fruit that is only just ripe or on the under-ripe side and so ensure that there is sufficient pectin present for the jam to jell properly.

Pectin can always be brought into the maximum working order if a little acid is added to the fruit. This is not necessary, of course, with acid fruits like gooseberries, particularly when on the unripe side, as is often the case in green plum or green gooseberry jam. Acid is, however, needed with such fruits as strawberries, and this is the reason why lemon juice is so often advised to be added to the fruit during cooking.

In fact, it can be said that the pectin is brought into solution, particularly in the case of ripe fruit, in the presence of acid, provided it is gently cooked. It is never advisable to add the sugar until the fruit has been well broken down by the cooking process, and until some of the water has been evaporated.

It *must* be realised that at high temperatures the pectin is destroyed. To go on boiling jam that will not set properly merely turns the sugar into a sort of caramel solution, and then you get the unpleasant syrupy jams that are sometimes served at table. If the jam does not set at the first boiling, do not make the mistake of boiling it up again

## FRUIT GROWING AND PRESERVING

unless you can add pectin by means of minced gooseberries, finely-chopped-up apple peel, or pectin, which can now be bought in bottles and cans under various names, such as Certo.

### THE NEED FOR ACID

The importance of acid has already been mentioned, and it must be stressed here that the jellying of a jam, or a jelly for that matter, is bound up with the content of acidity in the fruit. There is plenty of acid, for instance, in apples, blackberries, currants, gooseberries, damsons, loganberries and plums. It is necessary, on the other hand, to add acid to sweet cherries, figs, sweet apples, sweet late blackberries and pears.

Acid can be added in various ways. Personally I make strawberry jam by mixing 1 lb. of gooseberries to every 4 lb. of strawberries, and by passing the gooseberries through a mincing machine they are hardly noticed when the jam is made.

Red currant juice is sometimes added, or gooseberry juice, and when available the juice of a lemon.

The proportions are 8 tablespoonfuls of lemon juice to every 4 lb. of fruit, or  $\frac{1}{4}$  oz. of citric or tartaric acid to every 4 lb. of fruit.

### THE PLACE OF SUGAR IN JAM MAKING

As this book is actually being written during rationing the problem of sugar is, of course, acute. Most years, however, special grants have been made for jam making, and in most households small quantities have been put by every week, to be used for making with fruit into jam in the summer.

## JAM AND JELLY MAKING

Any type of sugar can be used, but granulated is perhaps the best.

It is better not to add the sugar until the fruit has cooked for some time, and, in fact, until it is almost ready to turn out. If crystallisation takes place after the jam is made, this is due to a too high percentage of sugar. It may be that too much sugar has been used, or that the jam has been boiled for too long.

To give a concrete example, if 15 lb. of raspberries were to be made into jam, and 15 lb. of sugar could be added, then the raspberries should be simmered in the pan until, owing to the evaporation of moisture, the weight came down to about 10 lb. All that need be done then would be to add the sugar, and then bring the jam quickly to boiling-point. It should then be ready to put into jars and will set perfectly.

It isn't, however, all fruits that will evaporate to this extent. For instance, the writer has made 25 lb. of jam with 15 lb. of mixed fruit and 15 lb. of sugar. The quantities made will differ, then, according to the type of fruit used.

### TREATMENT OF JAM DURING COOKING

For some reason or another housewives must be constantly skimming jam while it is simmering. This is a mistake. There is no need to do the skimming until a short time before the sugar is added. Invariably skimming leads to more skimming, and a greater amount of jam is lost as a result.

### FILLING THE JARS

Always cool the jams before pouring them into the jars.

## FRUIT GROWING AND PRESERVING

This is especially necessary in the case of conserves which contain a high proportion of jelly. If you want the fruit to remain evenly spaced throughout the jam, instead of rising to the surface, be sure to stir the jam well before pouring it into the jars.

Special emphasis on this cooling and stirring should be made in regard to strawberry, raspberry and apricot.

Always warm the jars before pouring in or otherwise they will crack.

### TYING DOWN

Place a waxed paper circle on the surface of the jam immediately after the jar is filled. It is possible to obtain circles already cut which have been treated with an anti-septic, and these are useful because moulds are prevented from growing when they are used.

Do not tie down while the jam is hot, or moisture will condense under the cover and produce such conditions which make mould development almost certain. Do not, however, go to the other extreme and not cover for several days. Tie down properly and carefully immediately the jam is cold.

### GENERAL DIRECTIONS

Though special recipes are given for the jams that are to be made, it is as well to understand general principles, and the following chart sets out the water to add and the sugar to use in the case of the majority of fruits. These figures are just a guide and need not be followed slavishly, as will be seen from the individual recipes given.

## JAM AND JELLY MAKING

<i>Name of Fruit</i>	<i>Weight of Fruit</i>	<i>Pounds of Sugar</i>	<i>Pints of Water</i>
Blackberry ... ...	6	6	1
Black currant ... ...	4	5	3
Cherries (after stones removed)	5	3½	—
Damsons ... ...	4	4	1
Gooseberries ... ...	3	3½	1
Loganberries ... ...	4	4	—
Plums ... ...	4	4	1
Raspberries ... ...	4	4	—
Red currants ... ...	4	5	3
Strawberries ... ...	4	3½	—

### TESTING

A little of the jam should be put on to a plate. If the setting point has been reached the jam will wrinkle when pushed with the finger.

Another method is to take some jam on a clean wooden spoon, allow it to cool a little, and then let it drip from the edge. If setting point has been reached the drops will run together and break away in flakes.

Testing for setting point should begin after about 10 minutes of rapid boiling. Over-boiling darkens the colour and spoils the flavour and may give a runny jam. Under-boiling may cause fermentation of the jam in store.

### *Apple Ginger*

5 lb. apples	$\frac{1}{2}$ pint water
5 lb. sugar	$\frac{1}{4}$ lb. ginger

Peel, core and slice the apples. Boil to a pulp. Stir while cooking. Add sugar and ginger and boil for further 5 minutes. Tie down when cold.

## FRUIT GROWING AND PRESERVING

### *Apple and Apricot Jam*

2 lb. apricots	6 lb. apples
Sugar as instructed below	Water

Boil apricots till tender. Peel, core and slice apples and cook till soft. Strain fruit, squeezing through all pulp. Bring to the boil and to each 1 lb. of pulp allow  $\frac{3}{4}$  lb. sugar. Boil quickly till it sets when tested.

### *Blackberry Jam*

3 lb. blackberries	3 lb. sugar
	$\frac{1}{2}$ pint water

Boil the blackberries till soft, then add the sugar and continue boiling quickly for 20 minutes, stirring continually.

### *Blackberry and Apple Jam*

3 lb. blackberries	3 lb. apples	3 lb. sugar
		$\frac{1}{2}$ pint water

Boil the apples in the water till partly cooked. Add the blackberries, and boil till soft. Put in the sugar and boil briskly for 25 minutes. Tie down when cold.

### *Apple Jam (1)*

4 lb. apples	4 lb. sugar
2 lemons	$\frac{1}{4}$ oz. ground ginger
Few cloves	

Peel and cut apples into slices. Add cloves, ginger and lemon juice. Boil slowly for  $1\frac{1}{2}$  hours. The less the mixture is stirred the more transparent will be the preserve.

## JAM AND JELLY MAKING

### *Apple Jam (2)*

Peel and core apples, cut into  $\frac{1}{2}$ -in. cubes and weigh them. Place in a deep bowl with their own weight of granulated sugar and allow to stand for 48 hours. Strain off liquid into preserving pan and bring it to the boil. Add apples, and simmer slowly without stirring until the fruit becomes transparent.

### *Apple Marmalade*

9 lb. cooking apples                      Sugar

Wash, dry and place apples whole in preserving pan with sufficient water to cover them. Cook till soft enough to pass through a sieve. For every pound of pulp allow 2 oz. of sugar. Re-heat pulp and heat sugar separately. Add together and boil the mixture until the sugar dissolves and the marmalade will set.

### *Black Currant Jam (1)*

4 lb. black currants                      5 lb. sugar  
    3 pints water

String the fruit, and simmer in water for  $\frac{1}{4}$  hour. Then add the sugar, stir till all is dissolved, and boil rapidly until jam sets when tested.

### *Black Currant Jam (2)*

1 quart black currants                1 pint water  
    3 lb. sugar

Boil for 10 minutes. Add sugar and boil very quickly for a further 20 minutes, stirring all the time.

## FRUIT GROWING AND PRESERVING

### *Black Currant Jam (3)*

1 lb. black currants	1 pint water
	3 lb. sugar

Boil fruit and water for 30 minutes. Heat the sugar and add to the fruit, stirring all the time. Boil quickly for 5 minutes only.

### *Cherry Jam (1)*

4 lb. cherries	4 lb. sugar
$\frac{1}{2}$ pint water	$\frac{1}{4}$ ounce tartaric acid

Boil sugar and water together for 10 minutes. Add cherries and boil for further 10 minutes. Leave till next day and boil for a further 10 minutes.

### *Cherry Jam (2)*

Use cherries that are not too ripe. Stone them and weigh them. Add equal weight of sugar and place in an earthenware dish. Leave overnight. Next day put into preserving pan and boil until the jam thickens and sets.

### *Fig Jam*

Steam figs in double cooker. Add half their weight in sugar and place the mixture in preserving pan. Flavour with lemon juice. Boil steadily till jam thickens, then rub through a coarse sieve. Return it to the pan and re-heat. Bottle, and tie over when cold.

### *Fig and Pineapple Jam*

Cook the figs till tender, in very little water. Add half their weight in sugar, and add also enough chopped pineapple to give a good flavouring. Boil till the mixture thickens. Rub through a coarse sieve. Put back in preserving pan and re-heat before putting into jars.

## JAM AND JELLY MAKING

### *Gooseberry Jam (1)*

7 lb. gooseberries	7 lb. sugar
	$\frac{1}{2}$ pint water

Top and tail the gooseberries and wash them. Add the sugar and water. Stir well until all sugar is dissolved. Skim off the scum that forms if necessary. Boil quickly for 30 minutes. Allow to cool before covering.

### *Gooseberry Jam (2)*

6 lb. gooseberries	3 pints water
	$4\frac{1}{2}$ lb. sugar

Make a clear syrup of the sugar and water. Put the fruit in and simmer the whole slowly until it will set when tested.

### *Grape Jam (1)*

Pick the grapes from their stems and put them in a double cooker or a jar standing in a pan of water. When heated through and soft, simmer in a preserving pan for  $\frac{1}{2}$  hour. Allow to cool, and then weigh the pulp.

Pass through a coarse sieve.

Allow 1 lb. 2 oz. of sugar to every pound of pulp. Replace the mixture in the preserving pan and simmer till it will set when tested. Stir frequently.

### *Grape Jam (2)*

4 quarts green grapes	Sugar
1 pint water	

Place fruit in pan with the water and let them simmer till soft. Pass through a coarse sieve. Measure, and add an equal quantity of sugar. Boil for  $\frac{1}{2}$  hour, stirring all the time. Cover when cold.

*Loganberry Jam*

3 lb. loganberries	3 lb. sugar
--------------------	-------------

Crush the loganberries, put them in a covered pan and simmer very slowly for  $\frac{3}{4}$  hour. Add the sugar and boil briskly for  $\frac{1}{2}$  hour.

*Loganberry and Apple Jam*

2 lb. loganberries	2 lb. apples
3 $\frac{1}{2}$ lb. sugar	$\frac{1}{2}$ pint water

Peel, core and slice the apples. Add to the loganberries and boil for 30 minutes. Add the sugar and boil for a further 20 minutes. Allow to cool before tying down.

*Rhubarb Jam (1)*

4 lb. rhubarb	4 lb. sugar
2 teaspoonfuls ginger	Juice of 1 lemon

Cut the rhubarb into pieces about 1 in. long. Place in a pan with the sugar and lemon juice and leave for a day. Then add the ginger and boil all together for about 1 $\frac{1}{2}$  hours. Put into warm jars and seal at once.

*Rhubarb Jam (2)*

Rhubarb	Sugar
Ginger	2 lemons

Wipe the rhubarb and cut into short lengths. Leave to dry for 48 hours. Put the sugar, lemon peel (grated), ginger and 1 gill of water into a preserving pan. Bring to the boil, and allow to boil for 5 minutes. Stir frequently. Add the dry rhubarb and boil a further 30 minutes. Stir very carefully to avoid breaking the sticks. Pour into jars and cover at once.

## JAM AND JELLY MAKING

### *Plum Jam (1)*

12 lb. ripe plums                    12 lb. sugar

Wipe and stone the plums. Place the fruit and half the sugar in layers in a preserving pan or earthenware bowl and allow it to stand overnight. Next day boil up in the preserving pan, stirring carefully. When the fruit begins to soften add the rest of the sugar and boil till the jam thickens and sets.

### *Plum Jam (2)*

4 lb. plums                    Water                    4 lb. sugar

Wipe and stone the fruit. Cover with water and boil till tender. Add the sugar and boil briskly for  $\frac{1}{2}$  hour. Tie down when cold.

### *Black Plum Jam*

Ripe plums                            Caster sugar  
Water

Wipe, stone and cut the plums. Place them in a pan with a little water and put on the side of the stove till heated through. Bruise them thoroughly with a wooden spoon, and cook for a few minutes. Pass them through a colander with a pestle and extract as much juice as possible.

Boil for an hour, stirring continually. Allow 12 oz. of caster sugar to every pound of pulp. Remove the pan from the fire to put the sugar in. Mix thoroughly and boil briskly for 15 minutes.

Put into pots, sifting some caster sugar over the top.

### *Plum Marmalade*

5 lb. plums                    Sugar                     $\frac{1}{2}$  pint water

## FRUIT GROWING AND PRESERVING

Wipe and stone the fruit and cut into halves. Add water, a handful of the sugar and  $\frac{1}{2}$  teaspoonful of cinnamon. Boil all till soft, stirring frequently.

Press fruit through a sieve, weigh it and allow 12 oz. of sugar to every pound of pulp. Boil the sugar separately with a gill of water for 10 minutes.

Add to the fruit, boil for 15 minutes, stirring all the time, and bottle. Tie down when cold.

### *Raspberry Jam (1)*

3 lb. raspberries	3 lb. sugar
-------------------	-------------

Put the fruit and sugar in pan overnight. Next day add  $\frac{1}{2}$  gill water and bring quickly to the boil. Boil quickly for 10 minutes. After taking off the fire stir briskly for 3 minutes. Bottle, and tie down when quite cold.

### *Raspberry Jam (2)*

6 lb. raspberries	6 lb. sugar
-------------------	-------------

Put the fruit into a preserving pan and boil quickly for 8 minutes. Heat the sugar and add to the fruit. Boil for a further 5 minutes. Bottle, and tie down when cold.

### *Raspberry Jam (3)*

4 lb. raspberries	4 lb. sugar
-------------------	-------------

Simmer the fruit till reduced by one third. Heat the sugar and sprinkle in gradually, stirring all the time till all is melted. Boil for 3 minutes and bottle and cover immediately.

### *Raspberry and Red Currant Jam*

3 lb. raspberries	2 lb. red currants
5 lb. sugar	$\frac{1}{2}$ pint water

## JAM AND JELLY MAKING

Cook the red currants till tender and pass through a sieve. Place water, raspberries and sugar in the preserving pan and bring to the boil. Add red currant juice. Boil all together till jam sets when tested.

### *Raspberry and Gooseberry jam*

2 lb. raspberries	1 lb. gooseberries
3 lb. sugar	$\frac{1}{2}$ pint water

Top and tail the gooseberries. Cook till tender. Add the raspberries and boil for 5 minutes. Add sugar and boil briskly for 15 minutes.

### *Raspberry and Apple Jam*

3 lb. raspberries	$1\frac{1}{2}$ lb. apples
4 lb. sugar	$\frac{1}{2}$ pint water

Cook the apples in the water till almost done. Add the raspberries, bring to the boil and simmer for 10 minutes. Add the sugar and boil briskly for  $\frac{1}{4}$  hour. Bottle, and tie down when cold.

### *Strawberry Jam (1)*

6 lb. strawberries	6 lb. sugar
--------------------	-------------

Boil the sugar till it candies when dropped into hot water. Gradually add the strawberries, stirring carefully. Boil for 15 minutes. Tie down when cold.

### *Strawberry Jam (2)*

Boil strawberries, mashing to extract all the juice possible. For every pint of pulp allow  $\frac{3}{4}$  lb. sugar. Boil till jam sets when tested.

### *Strawberry Jam (3)*

4 lb. strawberries	3 lb. sugar
--------------------	-------------

## FRUIT GROWING AND PRESERVING

Place fruit in a preserving pan. Add sugar very gradually, while fruit warms up, and juice begins to run. Bring to the boil and continue boiling for 20 minutes. Tie down when cold.

### *Strawberry and Raspberry Jam*

2 lb. strawberries	2 lb. raspberries
	$3\frac{1}{2}$ lb. sugar

Place fruit in preserving pan on stove and leave till juice begins to run. Bring to the boil, add sugar and boil briskly till jam sets when tested.

### *Strawberry Preserve*

3 lb. strawberries	$2\frac{1}{4}$ lb. sugar
	1 pint water

Make a syrup of the sugar and water, and whilst boiling add the strawberries one by one, very carefully. Cook quickly for 15 minutes. Do not stir for fear of breaking the fruit, but move pan to and fro.

Lift them out carefully into jars. Fill about three-quarters full. Boil up the syrup again for 5 minutes and pour into the jars. Refill when cold if necessary.

## THE MAKING OF FRUIT JELLY

Jelly making is similar to jam making but has perforce to take two successive days as a rule. On the first day the cooking of the fruit is done with or without the addition of water. Then the straining has to take place and the juice thus obtained is boiled with the sugar until it sets.

## KINDS OF FRUIT SUITABLE

The fruits that are suitable for making into jelly are damsons, sloes, red currants, black currants, blackberries,

## JAM AND JELLY MAKING

quinces, apples and gooseberries. All fruits will, of course, make jelly, but it is useless, for instance, to make cherry jelly, for this is quite insipid, while jellies made from plums are merely sweet and have no particular flavour.

### FRUIT PREPARATION

There is no need to prepare the fruits when making jellies—*i.e.*, to pull off the stalks, or even to peel or core. Good jellies can be made of the fruits just as they are picked.

### ADDING WATER

It is usually necessary to add a certain amount of water, varying this with the fruit used. Those with plenty of juice need less water than those that are not so juicy.

The normal quantity for soft fruits is 1 pint of water to 3 lb. of fruit.

Black currants take longer to cook and have therefore to be classed with apples, damsons and sloes. In this case the quantity of water is  $\frac{3}{4}$  pint to every 1 lb. of fruit.

### ADDING ACID

In the case of blackberries and apples it is necessary to add  $\frac{1}{4}$  oz. acid, as advised for jam making, per 4 lb. fruit.

### COOKING THE FRUIT

Bring the fruit and water slowly to boiling point and cook gently for an hour or more. Stir the pulp at intervals to mash the fruit, but do not allow it to burn.

### STRAINING THE JUICE

When cooked and tender the pulp should be strained through what is commonly known as a jelly bag. This

## FRUIT GROWING AND PRESERVING

should be made of flannel, felt, or two or three thicknesses of linen. These bags are best made cone-shaped and they can usually be hung satisfactorily from the legs of a chair turned upside down. The basin is then put underneath on the bottom of the chair seat, and the liquid thus drips through the bag into the basin.

If the jelly bag is scalded with boiling water before the pulp is turned in the material is wetted and the juice passes through quicker. The pulp should be allowed to drain for 12 hours without being disturbed. The residue in the bag at the end of this period should be a solid mass. This will still contain a quantity of pectin and so should be mixed to a thin mash with water, simmered again for 1 hour and then drained through the jelly bag for 5 or 6 more hours. These extracts, that is from the first draining and second draining, may either be kept separate to make two separate qualities of jelly or may be mixed together.

### ADDING THE SUGAR

The amount of sugar to be added depends to a great extent on the pectin present and the density of the extract. With fruits that make good jelly, like crab apples, red currants and quinces,  $\frac{3}{4}$  lb. sugar is sufficient per pound of extract. If, on the other hand, other fruits are being used which do not jelly particularly well, 1 lb. of sugar per 1 lb. of extract will be needed.

The sugar should not be added until the extract juice has been brought slowly to the boiling point and has boiled for 10 minutes.

### BOILING

After the sugar has been added and stirred in till it is dissolved, there should be no necessity to carry out any

## JAM AND JELLY MAKING

more stirring. Leave the scum on the surface. Do not skim off until just before pouring into the jars. Boil for 30 minutes after adding the sugar.

(Quite a good tip is to heat the sugar in the oven before adding it as it then dissolves quickly and stirring is reduced to a minimum.)

### KNOWING WHEN READY

Put a teaspoonful of the hot jelly on a cold plate and leave to cool. Gently push the jelly with the forefinger and if it is properly set it will 'crinkle.'

Another method is to dip a ruler into the boiling jelly and holding it well over the pan, allow the jelly to drop off from the edge. If the extract has been sufficiently boiled the drops will form a flake of jelly on the ruler.

From now onwards things must move. The scum must be taken off quickly, the jelly should be poured into the jars, waxed circles should be placed on whilst hot and the pots tied down as advised for jam. It is most important not to store jellies in damp cupboards.

### JELLIES WITHOUT WATER

It is possible to make excellent jellies without adding water. The yield, of course, is much smaller, the jellies are not so brilliantly clear, but the flavour is definitely superior. In this case use  $1\frac{1}{2}$  lb. sugar per 1 lb. extract, taking care to see that all the sugar is dissolved before pouring into the jars.

#### *Apple Jelly (1)*

Wash a quantity of apples and to every 3 lb. of apples add 1 quart of cold water. Simmer till the fruit is tender. Strain juice through a jelly bag or hair sieve. Measure the juice and boil for  $\frac{1}{4}$  hour.

## FRUIT GROWING AND PRESERVING

Add 1 lb. of sugar to every pint of liquid, and boil for 25 minutes. Heat the sugar before adding.

Bottle. Tie down when cold.

### *Apple Jelly (2)*

Peel apples and cut into slices. Place in a deep pan with enough water to cover the fruit. Leave till the fruit is soft. Strain the juice through a jelly bag. Add 1 lb. of sugar to every pint of juice. Boil very quickly for 10 minutes. Place some sliced lemon peel in the jars, pour the jelly on top.

Tie down when cold.

### *Apple Jelly (3)*

Wash apples; place whole in preserving pan with enough water to just cover them. Cook till they are soft. Pass through a sieve.

Weigh, and allow 12 oz. of sugar to every pound of pulp. Heat the sugar and add to the liquid. Boil quickly till the jelly will set when tested.

### *Crab Apple Jelly (1)*

Cut crab apples in halves. Place in preserving pan with enough water to just cover them. Bring to the boil. Strain off the liquid and allow 1 lb. of sugar to every pint of juice. Boil together for  $\frac{3}{4}$  hour. Heat the sugar before adding to the apple liquid.

### *Crab Apple Jelly (2)*

Wash the apples, wipe and weigh. To every pound of apples allow 1 gill of cold water. Boil till broken but not crushed. Strain the juice, weigh it and boil again quickly for 10 minutes. Stir in 10 oz. of loaf sugar to each pound of juice and boil for about 15 minutes.

## JAM AND JELLY MAKING

### *Windfall Apple Jelly*

Wash the apples, but do not peel. Place in preserving pan and cover with water. Boil gently till tender. Pass through a jelly bag and allow 1 lb. of sugar to every pint of juice. Boil for 20 minutes. Pour into warm jars. Tie down when cold.

### *Blackberry Jelly*

Pick over the berries, and place in a preserving pan with enough water just to cover them. Boil till soft. Strain through a jelly bag. Allow 1 lb. of sugar to each pint of juice. Heat the sugar. Add slowly to the blackberries and boil till it 'jells.'

Tie down when cold.

### *Blackberry and Apple Jelly*

Take equal quantities of blackberries and apples. Wash the apples and place in pan with enough water to cover. Boil till partly cooked. Add blackberries and boil till the mixture is thoroughly soft. Strain through a jelly bag and allow  $\frac{3}{4}$  lb. sugar to each pint of liquid. Heat the sugar, add to the liquid and boil for  $\frac{1}{2}$  hour or until it sets when tested.

### *Black Currant Jelly*

Place the fruit in preserving pan. Do not strig. Add sufficient water just to cover the fruit, and boil till soft. Strain off the juice and allow  $\frac{3}{4}$  lb. of sugar to each pint of juice.

Heat the sugar, add to the juice and boil till it sets.

### *Black Currant and Elderberry Jelly*

Take equal quantities of black currants and elderberries. Strip the elderberries from their stalks and place in a pan

## FRUIT GROWING AND PRESERVING

with the black currants. Bring to the boil and boil for at least 20 minutes. Strain off the juice.

Allow 12 oz. of sugar to every pint of liquid. Heat the sugar, add to the juice, bring to the boil and continue boiling for 25 minutes. Cover over whilst hot.

### *Red Currant Jelly (1)*

Place currants in stewpan with no water. Cover with paper or lid and stand in cool oven for an hour. Strain juice through a jelly bag and to every quart of juice extracted allow 1½ lb. loaf sugar.

Stir in the sugar and boil quickly till it will set.

### *Red Currant Jelly (2)*

Pick the currants free from stalks and put into a double cooker. Cook for an hour. Pass through a jelly bag. Boil up the liquid for 10 minutes, then add the sugar, which should be heated. Allow 1¼ lb. of sugar to each pint of liquid. Boil up again and boil quickly till set.

### *Red Currant Jelly (3)*

Place currants in a jar in a pan of hot water. Heat thoroughly and mash with a wooden spoon. Place in a jelly bag and leave all night. Measure the juice and allow 1 lb. of sugar to every pint of juice. Heat the sugar in the oven. Bring the juice to the boil and continue boiling for 20 minutes. Add the heated sugar, and stir well till all is dissolved. Boil up again for 1 minute, when it should set. Pour into warm jars.

### *Fig Jelly*

Slice the figs, adding the rind and juice of a lemon. Cook slowly in preserving pan for at least an hour, with

## JAM AND JELLY MAKING

just a little water. Strain off the liquid and allow  $\frac{3}{4}$  lb. sugar to each pint of juice. Boil for 20 minutes. Pour into warmed jars.

### *Gooseberry Jelly (1)*

Boil gooseberries with just enough water to cover them for 20 minutes. Strain off the juice through a jelly bag and allow 1 lb. of sugar to each pint of liquid.

Boil up again, heat the sugar; add to the liquid and boil very quickly for 5 minutes. Pour into jars. Tie over when cold.

### *Gooseberry Jelly (2)*

Use small, dark red, hairy gooseberries. Top and tail, wash and drain, and rub them through a sieve. Measure the pulp, and add double the amount of sugar. Put all into a pan and boil, stirring all the time until it sets and thickens.

### *Green Gooseberry Jelly (3)*

Use 6 lb. of green gooseberries to  $4\frac{1}{2}$  pints of cold water. Top and tail the fruit, wash and dry them, and put into pan with the water. Let them simmer till they are soft and broken. Strain through a jelly bag, and to every pint of juice allow 1 lb. of preserving sugar.

Boil the juice separately for about 15 minutes, then take it from the fire and add the sugar. Boil all together for 20 minutes. Pour into jars and tie down.

### *Gooseberry Mint Jelly*

2 lb. green gooseberries

Sugar

Fresh green mint

Wash the gooseberries, place in preserving pan. Cover

## FRUIT GROWING AND PRESERVING

with cold water and cook till soft and pulpy. Strain the juice off and to each pint of liquid add 1 lb. of sugar. Tie mint in a bundle, and place in preserving pan with sugar and fruit juice. Boil gently till jelly will set. Remove the mint, pour jelly into pots and seal at once.

### *Grape Jelly (1)*

Stem, wash and drain 4 quarts of green grapes. Put in pan with 1 pint of cold water. Simmer till soft and then pass through a sieve. Measure the liquid and add an equal quantity of sugar. Boil fast for 20 minutes, stirring constantly.

### *Grape Jelly (2)*

Pick grapes from their stems. Put in pan and heat slowly, mashing well with heavy wooden spoon. Bring to the boil and simmer for  $\frac{1}{2}$  hour. Strain through a jelly bag. Measure the juice, and boil for 20 minutes. Add an equal quantity of sugar and boil till it sets. Pour into jars and tie down.

### *Pear Jelly*

Peel and cut ripe pears into quarters. Boil with a little water till quite soft. Pass through a sieve. Measure the juice and add an equal quantity of sugar. Boil till it will set. Pour into jars and tie down.

### *Quince Jelly (1)*

Use unripe quinces. Peel, core and slice them. Place in preserving pan with enough water to float them and boil for  $2\frac{1}{2}$  hours. Strain through a jelly bag and add 1 lb. of white sugar to each pint of juice. Boil up again till the jelly will set.

## JAM AND JELLY MAKING

### *Quince Jelly (2)*

Peel and quarter the quinces and boil in sufficient water to keep the pieces from becoming pulpy. Strain through a jelly bag or fine sieve. Measure the juice and allow 1 lb. of sugar to each pint of liquid. Boil up again for 30 minutes.

### *Raspberry Jelly*

Place raspberries in pan, stirring all the time. Just as they come to the boil take them off and pass them through a jelly bag or fine sieve. Boil up for 20 minutes. Add 14 oz. of sugar to every pint of liquid and boil for a further 20 minutes. When cold put into pots and sprinkle a little powdered sugar over it. Let it stand for one day and then tie down.

## Chapter XVIII

### CRYSTALLISING FRUITS

THOSE who buy the delicious imported crystallised fruits have usually no idea that it is possible to do similar work at home. After all, such fruits are really portions which have been impregnated with what may be called an excess of sugar. The housewife starts by putting the prepared pieces of fruit in a fairly weak solution of sugar and then the density of the solution is increased week by week.

I have found that the easiest fruits to crystallise are strawberries, cut portions of really ripe pears after peeling, and whole greengages. Good large dessert plums are not at all bad either.

#### Preparing the Fruit

Peel the pears under salt and water so as to prevent the flesh turning brown. You need an ounce of salt per  $\frac{1}{2}$  gall. of cold water. Dip the greengages and plums for  $\frac{1}{2}$  minute into boiling water and then the peel should come off easily.

#### Preparing the Syrup

Start by making up a syrup consisting of 1 lb. of sugar to 1 pint of water—this quantity will be enough to cover 1 lb. of fruit. If it is proposed to crystallise large quantities of fruits, the sugar concentration may be reduced to 6 lb. of sugar to 6 pints of water per 10 lb. of fruit. Heat up

## CRYSTALLISING FRUITS

the sugar and water to make a syrup and then cool it down before pouring it over the fruit. Put an enamel plate upside down over the fruit with the idea of keeping all of it below the level of the syrup. If any portions of the fruit are exposed they invariably become discoloured.

The actual work of crystallising the fruit must extend over fourteen days and preferably over three weeks. The fortnight is the actual minimum, and it is because this



*Peeling pears in  
brine water.*

work takes so long that few bother to carry it out. Those, however, who do persevere are invariably delighted with the result.

### **The Plan**

On the first day the fruit is covered with the syrup as advised above and the bowl must be stood on a shelf in a cool place for a whole day.

On the second day, the liquid is poured off into a saucepan and 2 more ounces of sugar are added per 1 lb. of fruit to be covered, and when this has fully dissolved and the

syrup is hot it is taken off the stove and allowed to cool down before being poured over the fruit once more. Here it remains for another day.

On the third day, add 2 oz. of sugar per pound of fruit and repeat the process, only when the syrup is poured over once more, it must remain in position for two days.

This brings us to the fifth day, when once again the 2 oz. of sugar per pound of fruit are added. The syrup is heated again and when cool, poured over and once more two days elapse before it is examined.

On the seventh day repeat 'the dose' exactly as advised above, and that will bring you to Day 9.

On the ninth day, 4 oz. of sugar are added per pound of fruit, and on this occasion the now much stronger liquid is left over the fast crystallising fruits for three whole days.

On the twelfth day again add 4 oz., treat the syrup as usual, and when it is over the fruit once more leave for another three days.

Thus it will be seen that the process is not complete until the fifteenth day.

### The Drying Process

Pour off the syrup and use for any household purpose. It has not been harmed in any way and is excellent for puddings. Take out the portions of fruit and lay them on wire trays. Place these in a very cool oven at a temperature of 100° F. It pays to leave the oven door slightly open so as to ensure plenty of air. When the portions are dry they may be stored away in boxes, or they may be given a correct crystallised finish. Do not forget that whether this extra finish is given or not, crystallised fruits will not keep perfectly for longer than two months.

## CRYSTALLISING FRUITS

### The Finish

The pieces of crystallised fruits should be dipped into a strong solution of sugar and water when hot. The formula should be  $1\frac{1}{2}$  lb. of sugar in  $\frac{1}{4}$  pint of water, this being sufficient to treat about 2 lb. of fruit. Pour some of the hot syrup into a mug, skewer a piece of crystallised fruit, dip this into the hot liquid and put on to a wire tray to dry off.

The moment the syrup clouds in any way, put it on one side and start with another cupful of clear hot syrup from the saucepan, which should be left on the stove to keep hot.

Place the tray of dipped crystallised fruits into an oven at a temperature of  $90^{\circ}$  F. for 2 or 3 hours. Turn them over at the end of this period, and in 5 hours they should be ready for putting away. Leave the door ajar slightly and be careful not to allow the fruits to turn brown from being over-heated.

## Chapter XIX

### COOKING AND SERVING FRUIT

OF course, the great joy of growing fruits of all kinds is that they are to be eaten and enjoyed, and many will say that one should eat them all raw. There is undoubtedly a great deal to be said for this, though in fairness one must say that certain varieties of apples and pears, for instance, are specially grown for their culinary worth. It is also true to say that some people don't particularly like some types of fruits raw—for example, red currants or morello cherries.

Nevertheless, we should all do well to eat as much fruit as possible raw, providing one or two simple precautions are taken. We have a very wide choice, of course, but all fruits are not available raw every month of the year—except, of course, in cases where the householder has a deep-freeze cabinet. One can, of course, have dessert apples for most months of the year, but fresh strawberries are pretty seasonal. One can start from under cloches in May and then go on to the ordinary varieties outside and then the late varieties—and so even on to Alpine strawberries later still.

In the case of apples and pears they should, of course, be just ripe when eaten—not over-ripe and soft, but beautifully fresh and juicy and yet crisp and 'firmish.' Some, of course, prefer their apples really soft and past

## COOKING AND SERVING FRUIT

their best—but these are in the minority. The best way to eat apples, of course, is fresh and warm straight from the tree—and without peeling. It isn't possible to do this, of course, in the case of the late varieties like d'Arcy Spice or May Queen, which taste better after being stored.

When apples have been stored it is better to rub them, before eating, with a clean soft cloth. Pears often have to be picked and stored before they attain their full flavour; even a fairly ordinary variety like Williams is first class if picked unripe and then stored in a cool, dark shed for a short period. Few pears have much colour; on the other hand, apples can be very decorative when grouped in a bowl on the table.

Plums, peaches, dessert gooseberries, red and white currants, strawberries, blackberries, loganberries, raspberries, are all eaten raw, though the problem with some is that they cannot get enough sugar to reduce the acidity or to bring out the flavour.

### Cooking the Fruit

Of course, the simplest way of preparing fruit for the table cooked is to stew it, and generally speaking for every 1 lb. of fruit you need  $\frac{1}{2}$  pint of water and 4 oz. of sugar.

Put the sugar and water into a saucepan with a lid, or better still, into an earthenware or pyrex dish. Dissolve the sugar slowly with heat and when fully dissolved boil for ten minutes, but do not stir.

Prepare the fruit to be used by washing and, if necessary, wiping thoroughly, and place it into the syrup, simmering it gently in moderate heat with the lid on. Do this until it is tender. When the fruit is stewed in this way

## FRUIT GROWING AND PRESERVING

in a saucepan, serve it in a glass dish after cooling it slightly.

It is, of course, possible to stew two kinds of fruit together. Blackberries go well, for instance, with apples. With gooseberries, it adds to the piquancy if a little apricot jam is added to the sugar. Many like raspberries and red currants together, especially if they are going to use them afterwards in a summer pudding (see page 180). Few, however, cook strawberries; they prefer to eat them raw.

### RECIPES

#### *Apple Pie*

1 lb. cooking apples	$\frac{1}{2}$ teaspoonful spice
$\frac{1}{2}$ cup granulated sugar	6 oz. short-crust pastry
1 level tablespoonful of butter or margarine	2 tablespoonfuls of water

Prepare the apples by peeling, coring and slicing, and put them into a pie-dish. Sprinkle the sugar and spice over them. Cut the butter or margarine into small pieces and add this to the fruit. When evenly distributed pour in water until it just appears amongst the cut fruit. Another way of making delicious 'juice' to add instead of water is to boil the apple peelings in a little water until they are soft. Then strain and sweeten the liquid thus produced. Cover with short pastry rolled quite thin. Cover the pastry with greaseproof paper and place in a moderately hot oven until cooked. The paper prevents the pastry cooking more quickly than the fruit.

#### *Stewed Apples with Lemon*

1 lb. peeled apples	4 oz. sugar
$\frac{1}{2}$ pint water	Thick slice of lemon

## COOKING AND SERVING FRUIT

Stewed apples can be a very uninteresting dish, and I find that it makes all the difference to add a thick slice of lemon to every pound of apples being cooked in this way. The general instructions as to cooking will be found under 'Cooking the Fruit' on page 173.

### *Baked Apple Pudding*

1 lb. apples peeled and cored	6 oz. flour
4 oz. margarine	4 oz. caster sugar

Peel the apples, core them and cut them into slices. Well grease the dish with  $\frac{1}{2}$  oz. of margarine, lay the sliced apples evenly in the dish and sprinkle with 2 oz. of sugar. Next beat the remainder of the margarine and sugar to a cream and fold into the flour lightly (if you wish the mixture to be richer and lighter add one or two eggs well beaten). The mixture is poured on top of the apples and the dish is put into a fairly hot oven for about  $\frac{1}{2}$  to  $\frac{3}{4}$  hour.

### *Custard Apple Flan*

1 lb. prepared apple slices	1 open pastry case prepared beforehand
6 oz. sugar	$\frac{3}{4}$ pint of water

The sugar and apples and water should be simmered until a smooth pulp is formed. The whole should then be allowed to cool somewhat, and while this is going on the eggs should be beaten well. Add the beaten eggs to the pulp and the mixture will thicken. Keep stirring over gentle heat until it is of the right consistency. Then place into the pastry case and put in a gentle oven until the top has set a light brown, which usually takes about 15 minutes.

*Apple-Lemon Tarts*

As an alternative to the custard apple tart it is possible to make little tartlets and to alter the flavour by adding to each 1 lb. of prepared apples the juice of 1 large lemon and the peel grated. The mixture is prepared in exactly the same way as the recipe above, except that some of the peel can be cooked with the fruit and then the juice and the grated portion of the peel added afterwards. The whole peel is, of course, removed before this happens.

*Apple Charlotte*

$1\frac{1}{2}$ lb. cooking apples pre-	1 oz. margarine
pared	1 tablespoonful water
1 lemon	6 tablespoonfuls bread-
2 oz. sugar	crumbs
2 tablespoonfuls syrup	

Grease a piedish with a little of the margarine and sprinkle in some of the breadcrumbs. Cut the apples into thin slices and place them in the dish with alternate sprinklings of breadcrumbs. Pack fairly firmly, with breadcrumbs on the last layer.

Grate the lemon, squeeze out the juice and add the grated rind to this. Put in the syrup and the sugar as well as the water and mix well together. Heat these ingredients in a saucepan and spoon this slowly over the mixture. Put a small knob of margarine on the top and place in a moderate oven until cooked and slightly brown. Approximate time  $1\frac{1}{2}$  hours.

*Apple Snow*

4 oz. sugar	1 lb. apples
White of 1 egg	

## COOKING AND SERVING FRUIT

Put the apples in the oven, unpeeled, to bake. Lord Derby and Bramley's Seedling are particularly good cooked this way. When cooked, remove the skins and rub the flesh through a sieve. The white of egg should be beaten to a stiff froth and the sugar, preferably caster, should be added very slowly. Lastly add the sieved flesh and keep on beating until the whole is beautifully light and soft.

### *Apple Fritters*

3 large prepared apples	1 dessertspoonful salad oil
2 oz. flour	1 pinch salt
1 white of egg	$\frac{1}{2}$ cupful tepid water

Sieve flour and salt and make a well in centre, put in water and oil and beat to a smooth paste. Peel and core the apples, cut in slices about  $\frac{1}{4}$  in. thick. Whisk the white of egg until stiff and add to the batter. Heat some fat in a deep pan. Dip fruit in the batter and put in pan when the fat is smoking. When one side is golden, turn over and cook the other side. Take out of the fat and strain on paper. Serve sprinkled with fine sugar on a very hot plate.

### *Plum Tart, Spiced*

$\frac{1}{2}$ lb. self-raising flour	6 tablespoonfuls sugar
4 oz. margarine	1 lb. plums
1 saltspoonful cinnamon	$\frac{1}{2}$ lb. apples
1 pinch mixed spice	3 tablespoonfuls water

Mix all the dry ingredients together first and then add a little cold water so as to make them into a nice firm paste. Place some of this into a shallow tin to line it.

Parboil the plums after washing, and the apples after peeling, in a little water. They can be cooked together in the same pan. Sweeten with sugar when they are partly

## FRUIT GROWING AND PRESERVING

cooked and add 2 tablespoonfuls of water. Then put over the paste in the dish and cover with the remainder of the pastry. You can eat this dish either hot or cold.

### *Gooseberry Fool*

1 lb. gooseberries	6 oz. sugar
1 cupful of water	½ pint milk

Cook the gooseberries in the water with the sugar until quite soft. Then put the pulp through a sieve and add the milk, stirring well the whole time. Some prefer to add a little custard instead of milk. You can serve in fruit glasses with a blob of cream on the top of each.

### *Raspberry Fool, Plum Fool, Apple Fool, etc.*

Any fruit can be used to make a fool as shown above under Gooseberry Fool.

### *Raspberry Pudding*

1 teacupful ripe raspberries	2 tablespoonfuls of self-raising flour
1 teacupful chopped suet	
½ teaspoonful bicarbonate of soda	1 teacupful of milk
1 knob of margarine	1 egg

Put the flour, raspberries and suet into a basin and break in the whole of egg. Mix together thoroughly. Lastly add the milk, which should have had the bicarbonate of soda added to it first.

Grease a pudding basin with the margarine and pour in the whole of the mixture thus prepared. Put a large piece of greaseproof paper over the top and tie down.

Now place the basin into a steamer and cook for about 2 hours.

## COOKING AND SERVING FRUIT

### *Blackberry Charlotte*

1 lb. fresh blackberries	2 large cups of bread-
1 lemon	2 oz. sugar      crumbs
2 knobs of margarine	1 tablespoonful of water

Grease a piedish with the one knob of margarine. Then add a thin layer of breadcrumbs, next a layer of blackberries, and so on, ending with a layer of breadcrumbs on top.

Grate the lemon and add the juice and the grated peel to the sugar and water, and having heated them together, pour slowly over the top. Now put on the other knob of margarine, bake in the oven until all the fruit is cooked. It will probably take about 1 hour.

### *Bread and Fruit Pudding*

1 lb. of any fruit, preferably apples	1 knob of margarine
2 oz. suet	1 egg
3 oz. raisins or sultanas	3 oz. sugar
1 oz. of chopped nuts (if possible)	1 lemon
	1 cupful of milk

Grease a piedish with the margarine and then line it with the cut bread-and-butter. Put the fruit in position—the apples, of course, will be thinly sliced if used. Sprinkle in the sultanas as you do this, and the sugar and nuts as well, and add the juice of the lemon and the grated rind also.

Now cover this mixture with more bread and butter. Lastly beat up the eggs in the milk and pour carefully all over the top. Stand in the pantry for 1 hour at least and then bake in a moderately warm oven for  $1\frac{1}{2}$  hours until ready.

## APPENDIX

No attempt has been made to give full details of all the diseases and pests that attack fruit trees and bushes. *The A.B.C. of Pests and Diseases*, by the same author, published by the English Universities Press, price 6s., gives full instructions on this subject, and those who are keenly interested in this side of fruit production should consult this work.

It has been thought wise, however, to include a few special notes on virus diseases and one or two other troubles, while the spraying charts found at the end of each chapter should provide growers with the right programme for preventing the troubles to which fruit trees and bushes are prone.

### **Woolly Aphis (American Blight)**

The branches and even the young shoots will be seen to be covered with a white cotton-wool-like material. This substance is caused by numerous insects, called aphides. They spread rapidly from tree to tree and may give rise to heavy infestations.

The aphides suck the sap and cause gall-like swellings; sometimes the twigs die. In most cases they cause an entry for the fungus disease, canker.

Spray the tree with a 10 per cent. solution of a good tar distillate wash in December, using as much force as possible.

In the summer, spray or paint the affected parts with neat liquid derris.

**Canker**

Canker is a very common disease which usually develops elliptically around the centre of infection. Cankered areas are discoloured, sunken, and have a fringed edging of flaking bark as a rule. A canker may encircle a branch and kill it.

Round crimson little bodies like eggs usually appear, especially in the winter, and these produce the disease spores. They are often confused with red spider eggs.

With the sharp blade of a knife cut out the cankers as soon as they are seen back to healthy wood. Then paint over with a thick white lead paint.

Another method is just to paint the affected parts with a 'medicament' known as Medo. There is no need in this case to cut out the cankerous regions.

Some varieties such as James Grieve, Warner's King and Cox's Orange Pippin are particularly susceptible to Canker.

**Bitter Pit**

A functional disease which affects apples. The fruits show sunken circular spots on the skin; these may be dark green or have a brownish shade to them. If the skin is peeled off the flesh underneath will be found to be brown to a depth of about  $\frac{1}{4}$  in.

Bitter pit is not a disease in the true sense of the word. Its origin is veiled in mystery. It is usually bad on young trees, on trees that have been heavily manured with nitrogen, and on trees that have been pruned too hard.

**Reversion in Black Currants**

Reversion is a virus disease which attacks black

currants. It causes the blossoms to fail to set as a rule, and as a result reverted bushes seldom bear anything worth while.

Bushes that have been attacked by this disease can be recognised in May and June. The leaves in the middle region of the new growth will be more nettle-like in appearance. The centre lobe of a black currant leaf should have five or more sub-main veins, and in a reverted leaf there will usually be three or less. The flowers of a reverted bush are more highly coloured than the flowers of a healthy bush.

No method of curing this disease is known. Reverted bushes should be dug up and burnt. The pest that causes the big buds should be controlled at all costs. See spraying chart at end of chapter dealing with currants.

### Raspberry Mosaic

A very serious disease of raspberries. The leaves usually curl downwards, and have a yellow mottled appearance. The canes cease to grow satisfactorily. They are usually shortened and stunted and the crop is, of course, reduced considerably.

The most susceptible varieties are Baumforth's Seedling, Lloyd George and Superlative.

Unfortunately no cure is known. Infected canes must be dug up and burnt. Healthy virus-free canes may be obtained now from certain nurseries. These should not be planted in a garden until all canes infected with the virus have been destroyed.

### Strawberry Virus

There are two viruses that attack strawberries—(a) Yellow Edge, (b) Crinkle.

## FRUIT GROWING AND PRESERVING

In the case of yellow edge the plant becomes dwarfed, flattened in appearance, bearing small curved leaves on short stems. All the foliage will have a yellow edge to it and this is especially noticeable towards the centre of the plants. The trouble should be looked for in June, July, August and September. Infected plants should then be dug up and burnt.

In the case of crinkle, the yellowing may occur all over the leaf, which will become puckered and wrinkled in appearance. The yellow patches turn reddish in colour and when dead are brown.

Unfortunately many plants are affected by both yellow edge and crinkle together, and it is sometimes difficult to separate these virus diseases.

Infected plants must be dug up and burnt, and the strawberry aphides should be controlled as advised in the spraying chart which appears in the chapter on Strawberries.

## INDEX

### A

- Acid in jam, 146, 159
- American blight, 37, 181
- Aphides, 36, 38, 42, 181, 184
- Apple, 43
  - charlotte, 176
  - chutney, 138
  - and date chutney, 139
  - and onion chutney, 139
  - and tomato chutney, 139
  - drying, 135
  - flan, custard, 175
  - fool, 178
  - fritters, 177
  - ginger, 149
  - jam, 150
  - and apricot jam, 150
  - and blackberry jam, 150
  - jelly, 161
  - marmalade, 151
  - pie, 174
  - pudding, baked, 175
  - stewed, 174

### B

- Bastard trenching, 14
- B.D.H. Soil Indicator, 15
- Beetroot and apple chutney, 140
- Big bud mite, 37, 84
- Bitter pit, 181
- Blackberry, 79
  - charlotte, 179
  - jam, 150
  - and apple jam, 150
  - jelly, 163
  - and apple jelly, 163
  - pickle, 141
- Black currant, 83
  - jam, 151
  - jelly, 163
  - and elderberry jelly, 163

### Bordeaux mixture, 37

- Bottling, 120
  - Campden method, 131
  - cheapest way, 123
  - scientific method, 126
  - types of bottle, 120
- Boysenberry, 81
- Bread and fruit pudding, 179
- Brine solution, 131
- Broadleaf rootstock, 24
- Brutting (breaking), 89
- Burgundy mixture, 38
- Bush trees, 30
  - — purchasing of, 12
- Bushes, soft fruit, 30
  - — — purchasing of, 12

### C

- Campden bottling method, 131
- Cane fruits, 72
- Canker, 41, 181
- Caterpillars, 36
  - gooseberry, 37
- Certo, 146
- Cherry, 60
  - jam, 152
- Chutney, 138
- Clamping of apples, 50
- Cloches for strawberries, 105
- Copper-lime dust, 37
- Cordons, 30
- Crab apple jelly, 162
- Crinkle, 183
- Crystallisation, 147
- Crystallising fruits, 168
- Currants, *see* black, red and white

### D

- Damson, 59
  - cheese, 141
  - pickle, 140

## INDEX

- Derris, liquid, 36  
Digging, double, 14  
D.N.C., 38  
Doucin rootstock, 23  
Drying of fruit, 133  
Dusting, 40  
— machines, 38  
Dwarf pyramids, 31
- E**
- Emergency chutney, 143  
Espaliers, 31
- F**
- Fan trees, 31  
Fertilisers, 15  
Fig, 108  
— jam, 152  
— and pineapple jam, 152  
— jelly, 164  
— pickle, 141  
Flue dust, 43  
Frost, protection against, 116  
Fruit, bottling, 121  
— cooking of, 173  
— drying, 133  
— jelly making, 158  
— trees, planting, 25  
— — — distances, 26  
— — — mode of, 27  
— — — time of, 26  
— — — purchasing of, 12  
Fuseaux, 31
- G**
- Gooseberry, 93  
— chutney, 140  
— fool, 178  
— jam, 153  
— jelly, 165  
— mint jelly, 165  
Grape, 110  
— jam, 153  
— jelly, 166  
— pickle, 141
- H**
- Half-standards, 31  
Hydrated lime, 67
- J**
- Jam making, 144  
Jaune de Metz rootstock, 23  
Jelly making, 158  
Judge Logan, 76
- K**
- King's Acre berry, 81  
Krima tree tie, 33
- L**
- Laxton berry, 82  
Lead arsenate, 36  
Lee, Geo. Fowler, 127  
Lime sulphur, 36, 42  
Liming, 15, 67  
Loganberry, 76  
— jam, 154  
— and apple jam, 154  
Long Ashton Research Station, 88
- M**
- Machine dusting and spraying, 38  
Maidens, 32  
Manuring, 14, 25  
— apples, 45  
— blackberries, 80  
— black currants, 85  
— cherries, 67  
— figs, 110  
— gooseberries, 98  
— grapes, 112  
— loganberries, 77  
— peaches and nectarines, 115  
— pears, 56  
— plums and damsons, 62  
— quinces, 119  
— raspberries, 74  
— red currants, 90  
— strawberries, 103  
Medo, 41, 182  
Mosaic, raspberry, 183  
Moths, tortrix, 38  
— winter, 38  
Mulching, grapes, 112  
— raspberries, 75  
— wall cherries, 67

## INDEX

### N

Nectar berry, 82  
Nectarine, 113  
'Nicking,' 19  
Nicotine, 36

### O

Olives, plums pickled like, 143

### P

Peach, 113  
Pear, 54  
— drying, 136  
— jelly, 166  
— pickle, 142  
Peat, 62, 106  
Pectin, 144  
Phenomenal berry, 79  
Picking apples, 48  
— blackberries, 80  
— black currants, 87  
— cherries, 67  
— figs, 110  
— gooseberries, 99  
— loganberries, 78  
— peaches and nectarines, 117  
— pears, 56  
— plums, 64  
— quinces, 119  
— raspberries, 75  
— red currants, 91  
— strawberries, 106  
Pickles, 138  
Planting, 25  
— age at, 13  
— blackberries, 80  
— black currants, 86  
— distances, 26  
— figs, 110  
— gooseberries, 98  
— grapes, 112  
— loganberries, 77  
— method of, 27  
— peaches, 114  
— quinces, 118  
— raspberries, 74  
— red currants, 90  
— strawberries, 102, 104

Planting, time of, 26  
Plum, 59  
— drying, 136  
— jam, 155  
— marmalade, 155  
— pickle, 142  
— pickled like olives, 143  
— sauce, 142  
Pollination, 28  
— of cherries, 68  
— of plums, 62  
— of strawberries, 103  
Protection of fruit trees, 32  
Pruning, 16  
— apples, 44  
— blackberries, 79  
— black currants, 85  
— cherries, 70  
— figs, 109  
— gooseberries, 93  
— grapes, 111  
— loganberries, 77  
— peaches and nectarines, 114  
— pears, 55  
— plums and damsons, 61  
— quinces, 118  
— raspberries, 73  
— red currants, 89  
— root, 19  
— — figs, 109  
— — — peaches and nectarines, 116  
— — summer, 17, 20  
— — — apples, 45  
— — — figs, 109  
— — — gooseberries, 96  
— — — grapes, 112  
— — — peaches and nectarines, 115  
— — — pears, 56  
— — — raspberries, 73  
— — — red currants, 90  
Pyramids, dwarf, 31

### Q

Quince, 118  
— jelly, 166  
— rootstocks, 24

### R

Rainbow tree tie, 33

## INDEX

Raspberry, 72  
— fool, 178  
— jam, 156  
— and apple jam, 157  
— and gooseberry jam, 157  
— and red currant jam, 156  
— jelly, 167  
— mosaic, 182  
— pudding, 178  
Red currant, 88  
— — — jelly, 164  
Reversion, 181  
Rhubarb chutney, 143  
— jam, 154  
Ringing, 18  
— knife edge, 19  
Root pruning, 19  
— — — figs, 109  
— — — peaches and nectarines, 116  
Rootstocks, 13, 23  
— apple, 23, 44  
— cherry, 24  
— peach and nectarine, 24, 114  
— pear, 24, 55  
— plum, 25, 60

S

Sauce, plum, 142  
Scab, 37, 38, 49  
Scientific bottling, 126  
Self-sterility, 28  
Shelter, 11  
Snap closures, 120  
Soils, 11  
— for apples, 43  
— — — blackberries, 79  
— — — black currants, 83  
— — — cherries, 66  
— — — figs, 108  
— — — gooseberries, 93  
— — — grapes, 110  
— — — loganberries, 77  
— — — peaches and nectarines, 113  
— — — pears, 54  
— — — plums and damsons, 59  
— — — quinces, 118  
— — — raspberries, 72  
— — — red currants, 88  
— — — strawberries, 102

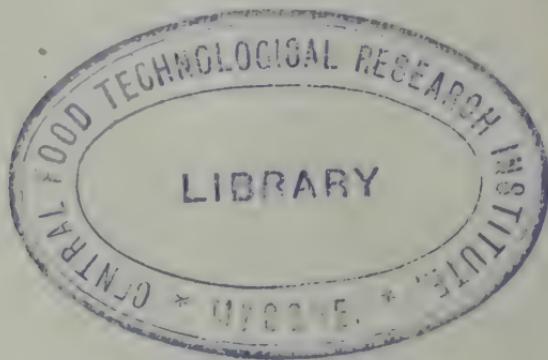
Spacing, *see* Thinning  
Spraying, 38  
— programme for apples, 52  
— — — blackberries, 81  
— — — black currants, 88  
— — — cherries, 70  
— — — gooseberries, 101  
— — — grapes, 113  
— — — loganberries, 79  
— — — peaches and nectarines, 118  
— — — pears, 58  
— — — plums and damsons, 65  
— — — raspberries, 76  
— — — red currants, 92  
— — — strawberries, 107  
Spur thinning, 20  
Staking, 32  
Standards, 31  
Sterilising, 127  
— chart, 129  
Stocks, *see also* Rootstocks  
— black currant, 85  
— loganberry, 77  
— raspberry, 73  
— strawberry, 102  
Storing, apples, 49  
— — — bottled fruit, 129  
— — — pears, 57  
Straw, 50, 106  
Strawberry, 102  
— — — jam, 157  
— — — and raspberry jam, 158  
— — — preserve, 158  
— — — virus, 182  
Syrup, 124, 168, 173

## T

Tar distillate wash, 38, 42  
Testing for setting, jam, 149  
— — — jelly, 161  
Thermometer, 127  
Thinning, 21  
— apples, 48  
— branches, 21  
— gooseberries, 99  
— peaches and nectarines, 116  
— pears, 56

## INDEX

- Thinning plums, 63
- spur, 20
- Three paper method of bottling, 124
- Trees, half-standard, 31
- maidens, 32
- purchasing of, 12
- standard, 31
- ties for, 33
- types for, apples, 43
- — — cherries, 66
- — — figs, 109
- — — peaches and nectarines, 114
- — — pears, 54
- — — plums and damsons, 59
  
- V
- Vacuum bottle, 120
- Varieties, apple, 51
- blackberry, 81
- black currant, 87
- cherry, 68
- fig, 110
- gooseberry, 99
- grape, 112
- peach and nectarine, 117
  
- Varieties, pear, 57
- plum and damson, 61
- quince, 119
- raspberry, 75
- red currant, 91
- strawberry, 107
- white currant, 92
- Veitch berry, 82
- Vines, *see* Grapes
- Virus, black currant, 182
- raspberry, 183
- strawberry, 183
- Vitamin C, 102
  
- W
- Walls, planting trees against, 28, 67
- Warm water treatment, 106
- Watering, 67
- White currants, 92
- Windfall apple jelly, 163
- Wood ashes, 43
- Woolly aphid, 37, 180
- Wrapping apples, 50
  
- Y
- Yellow edge, 183
- Young berry, 82



# Mowers of Distinction



RANSOMES  
LIGHT  
MOTOR MOWER

Ransomes Motor Mowers are made in several sizes, and are unrivalled for efficiency and perfection of construction.

Ransomes "Ajax" Hand Machine is the popular choice for medium-sized Lawns. Very light. Precision built. Highest-grade Ball Bearings.

RANSOMES  
POPULAR  
"AJAX"



12in. Cut

**Ransomes**  
*For Reliability*

RANSOMES SIMS & JEFFERIES LTD., ORWELL WORKS, IPSWICH



# FRUIT TREES ROSES & SHRUBS

## The Oldest Nursery

in ENGLAND, still controlled by the original family, offers you first-class stock for garden and greenhouse, with advice and prompt, courteous attention all backed by a valued reputation.

Price List free. Full Catalogue 6d.

**RIVERS**  
ESTABLISHED 1725

THOMAS RIVERS & SON, LTD., SAWBRIDGEWORTH, HERTS.  
Telephone: Sawbridgeworth 2338

# EVERY SPRAYING JOB

can be done  
with a



Does scores of jobs in garden, greenhouse or allotment quicker, better and cheaper. Creosote, limewash, insecticide, etc., are all applied easily with a powerful continuous spray. The "Solo" is made from solid brass and is supplied with three nozzles, 2 ft. brass extension for work above normal height, brass angle bend and rubber supply tube. From Ironmongers and Stores, or direct from the Manufacturers under  
"MONEY BACK"  
GUARANTEE.

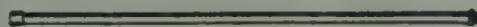
## GARDEN



## ORCHARD



## ALLOTMENT



**KNAPSACK SPRAYING OUTFIT.** As above, but with 3 gallon container, weighing only  $6\frac{1}{2}$  lbs., complete with hose and straps. Knapsack container for use with Standard type "Solo" Sprayer can be supplied.

*Send at once for illustrated folder.*

Sole Manufacturers:

**SOLO SPRAYERS LTD.** (Dept. F.G.), 90 Gracechurch St., London, E.C.3  
Phone: Mansion House 0158

# RAINBOW TREE TIES

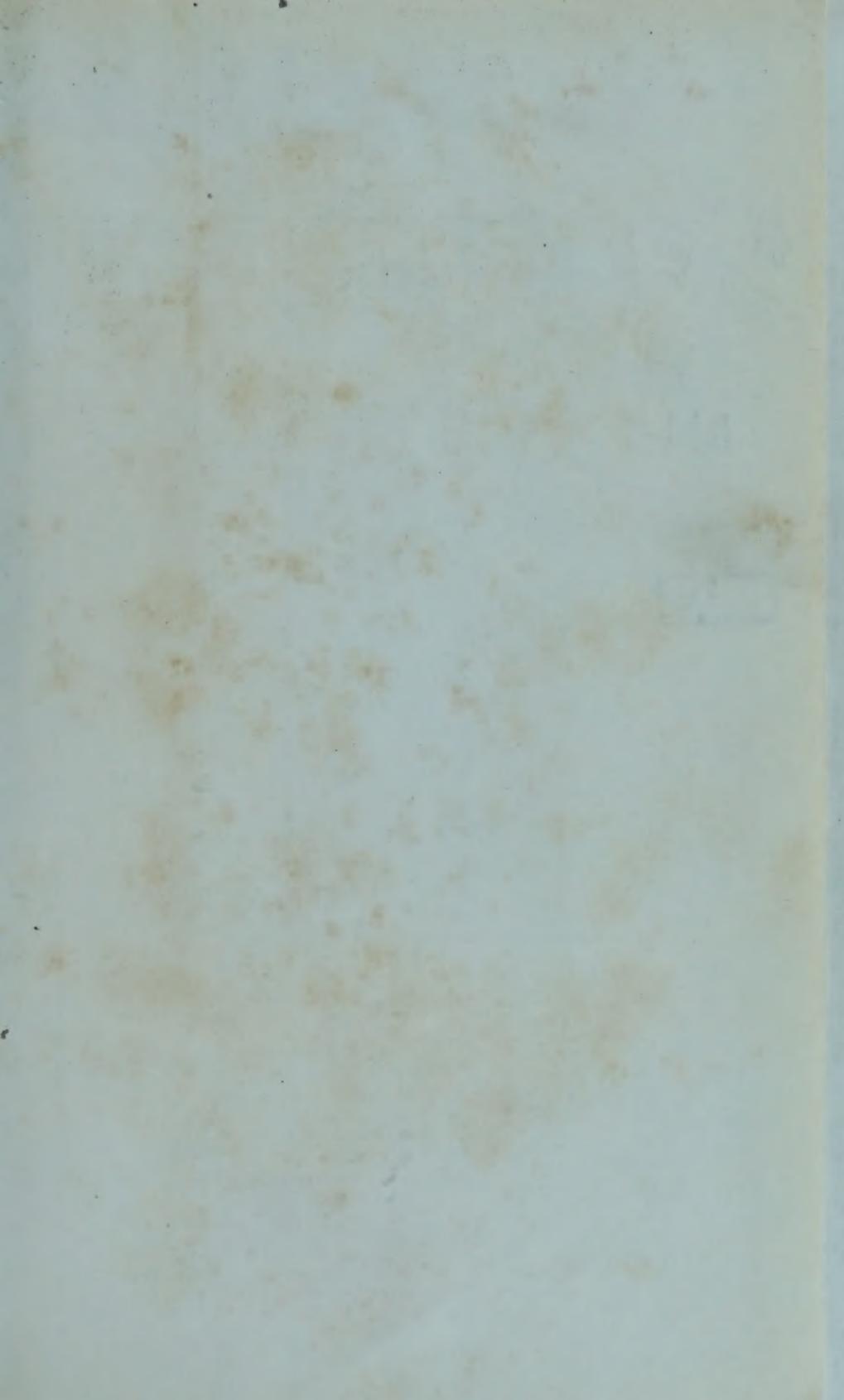


Rainbow Tree Ties are perfect for all types of staking and tree tying.

IMPERISHABLE • EXPANDING  
ADJUSTABLE

—  
*Enquire of your local supplier, or  
write direct to*

**S. H. RAINBOW**  
**QUORN GARDENS, LEIGH-ON-SEA, ESSEX**



C. F. T. R. I. LIBRARY, MYSORE-13

Acc. No. 2252

Call No. F8,39N:6 N51

Please return this publication on or before the last D  
DATE stamped below to avoid incurring overdue char

To be issued from :

Due Date	Return Date	Due Date	Return D



